CIO

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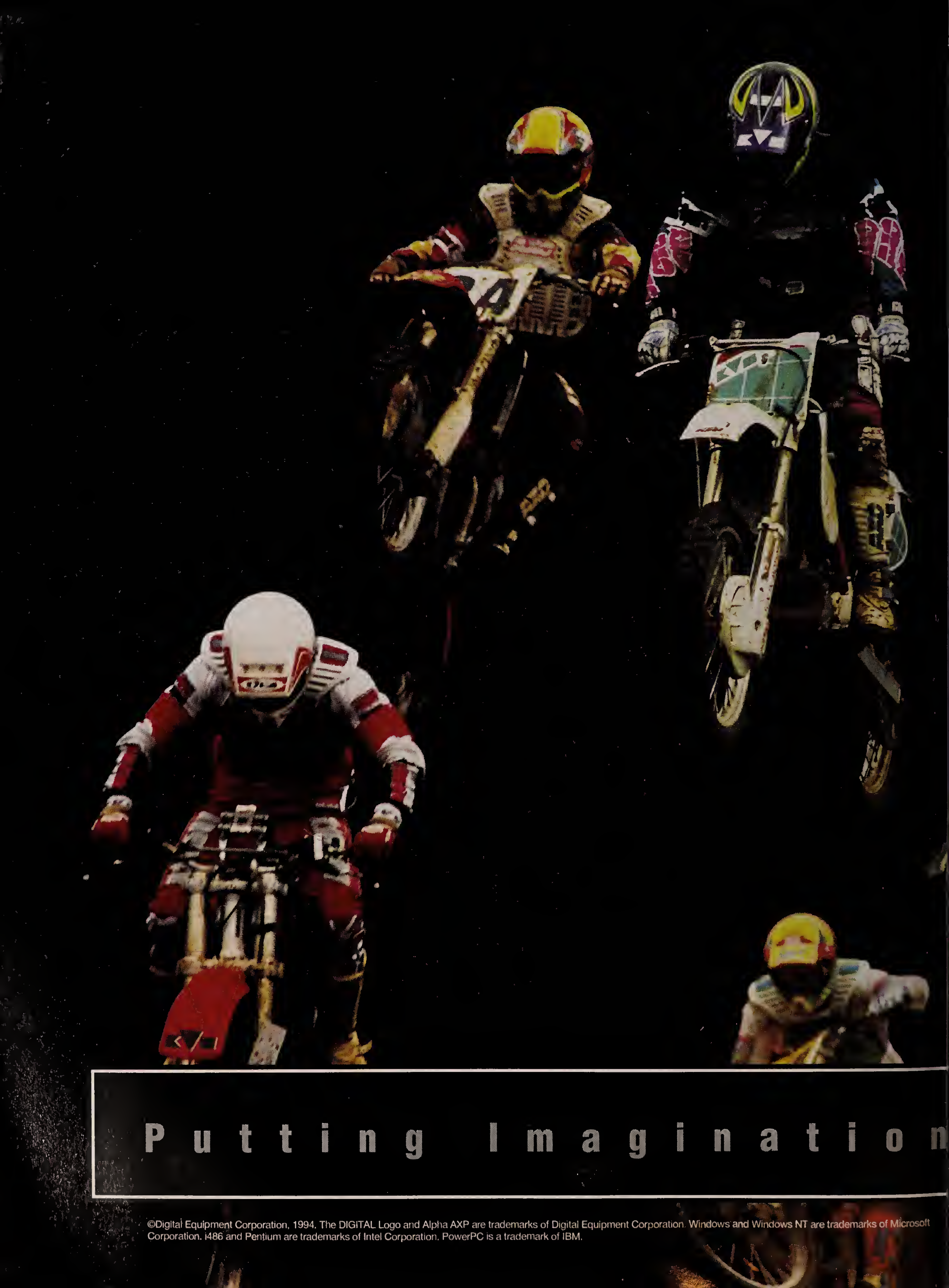
SEVEN DOLLARS

SPECIAL ISSUE

The 1993 ESPRIT AWARDS

Coming To Grips With Technology's Business Value

AN INTERNATIONAL DATA GROUP PUBLICATION



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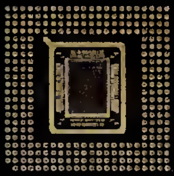

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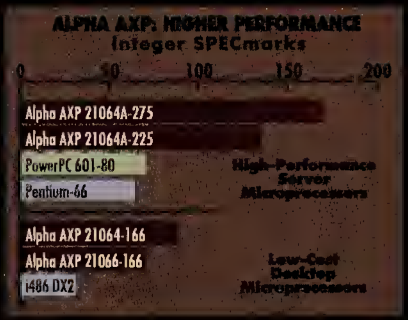

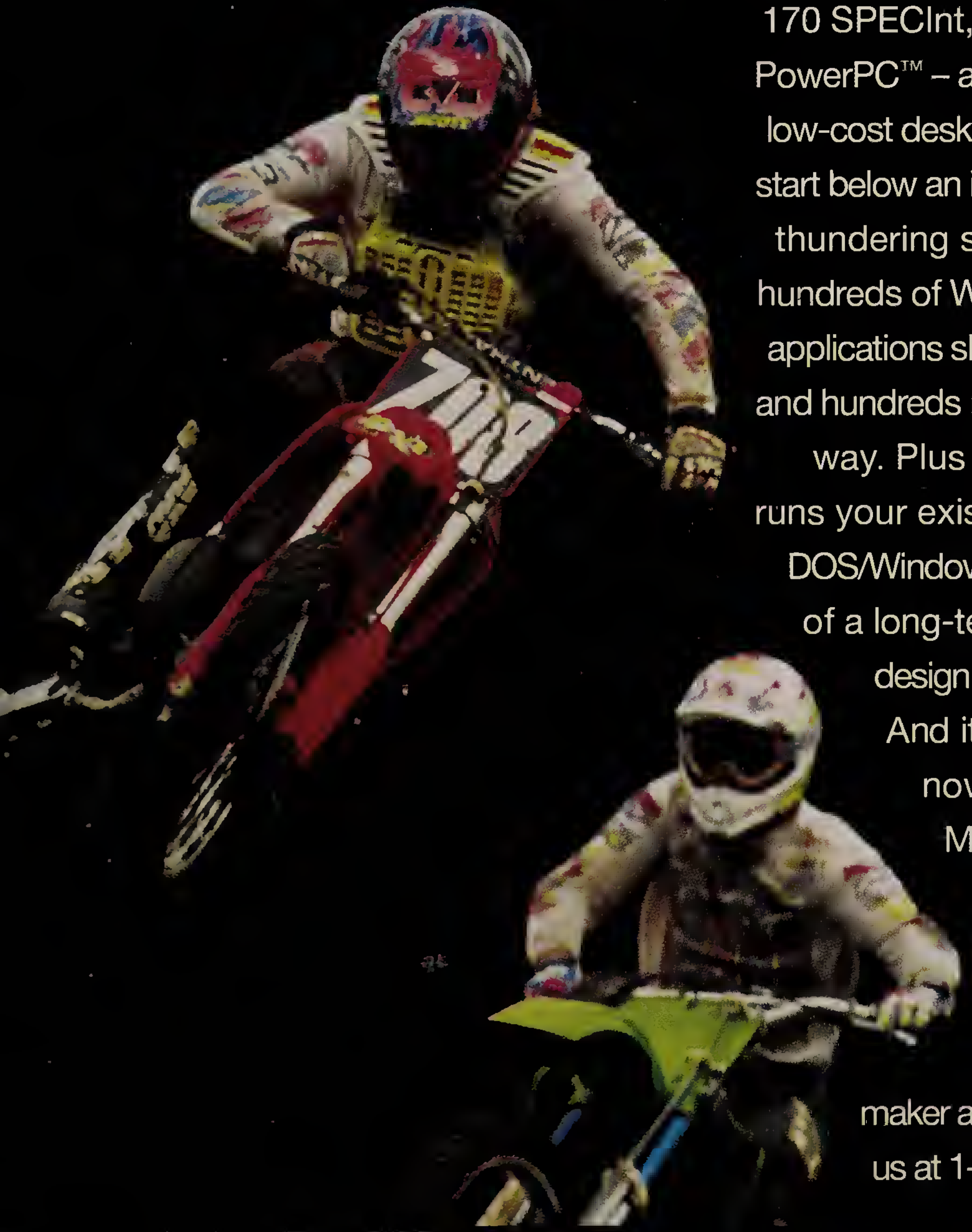

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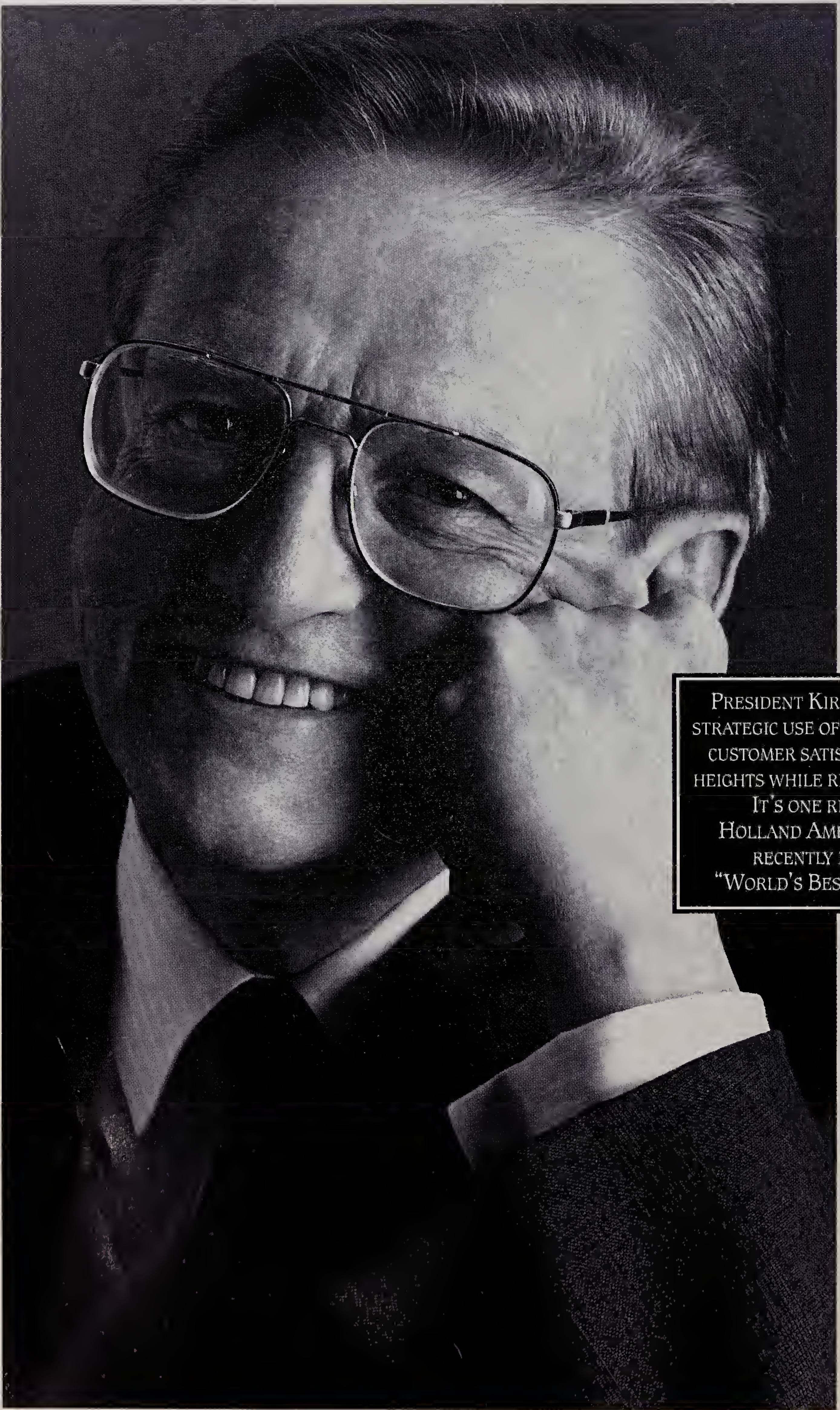

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Cover illustration by Diane Fenster

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Value Systems

The companies honored in this year's ESPRIT awards have plenty to crow about: successful systems that return real value to their organizations and the business-IS synergies that made those systems possible.

COMPLETE HEALTH SERVICES INC. **32**

A Clean Bill of Health

An image-based claims-processing system has enabled this health insurer to process claims in one-third the time with fewer employees. *By Carol Hildebrand*

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A Valuable Eco-System

A geographic information system helps protectors of Florida's natural resources crack down on violators by boosting their own productivity. *By Richard Pastore*

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By practicing what it preaches, one networking vendor achieved stellar growth. *By Megan Santosus*

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Offenders still hate the fines, but they now respect the system, thanks to technology that has improved the enforcement of parking laws. *By Megan Santosus*

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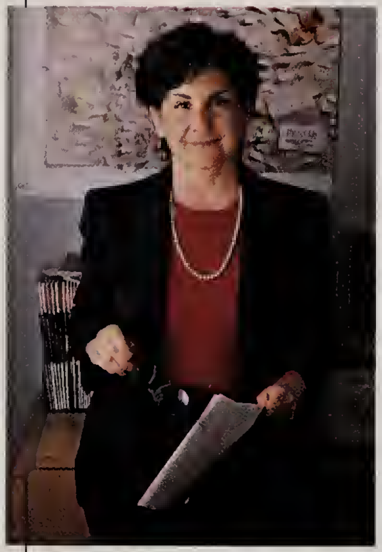

PHOTO BY WEBB CHAPPELL

Our readers repeatedly tell us one of their most-critical needs is justifying the investment in IT in language that top management can understand. This often means demonstrating hard-dollar savings or the business value of information systems. To help with this task, we asked our readers to submit entries detailing their organizations' return on investment from information technology, and we highlighted some of those outstanding applications and their results in our January 1993 issue.

The interest in that topic was so keen that we decided to make it official. Early last year, we teamed with Booz-Allen & Hamilton and created the ESPRIT award program for excellence in strategic partnering for return from information technology. The awards honor partnership between the IS group and business units in developing applications that contribute to the organization's success.

Our winners span a diverse group of organizations, from AT&T Universal Card Services Corp. to the South Florida Water Management District. And they represent a variety of industries—Complete Health Services Inc., representing the newsworthy health-care-insurer claims market, to SynOptics Communications Inc., a manufacturer of networking products.

The technologies used in these applications are leading edge: Los Angeles County's Department of Public Social Services' fingerprint-identification system, and the geographic information system and image-processing systems implemented by the City of Chicago's Bureau of Parking.

In some cases the systems brought new prestige and recognition to organizations. For years, Chicago's Bureau of Parking had been a moribund entity, and citizens did not take parking regulations seriously. Results credited to the new parking system include the ability to proactively manage city parking and recognition by the U.S. Department of Transportation that traffic flow-through has increased by 15 percent and pollution decreased by 10 percent.

In some cases the systems and the people developing them helped companies successfully enter new markets. At AT&T Universal Card Services Corp., customer service is the watchword, and the UWIN system provided an entry into the crowded credit-card market.

We hope our readers find the experiences of the organizations depicted here helpful. Our second annual ESPRIT awards application will be included in our Feb. 15 issue. *Now* is the time to enter!

Marcia Blumenthal

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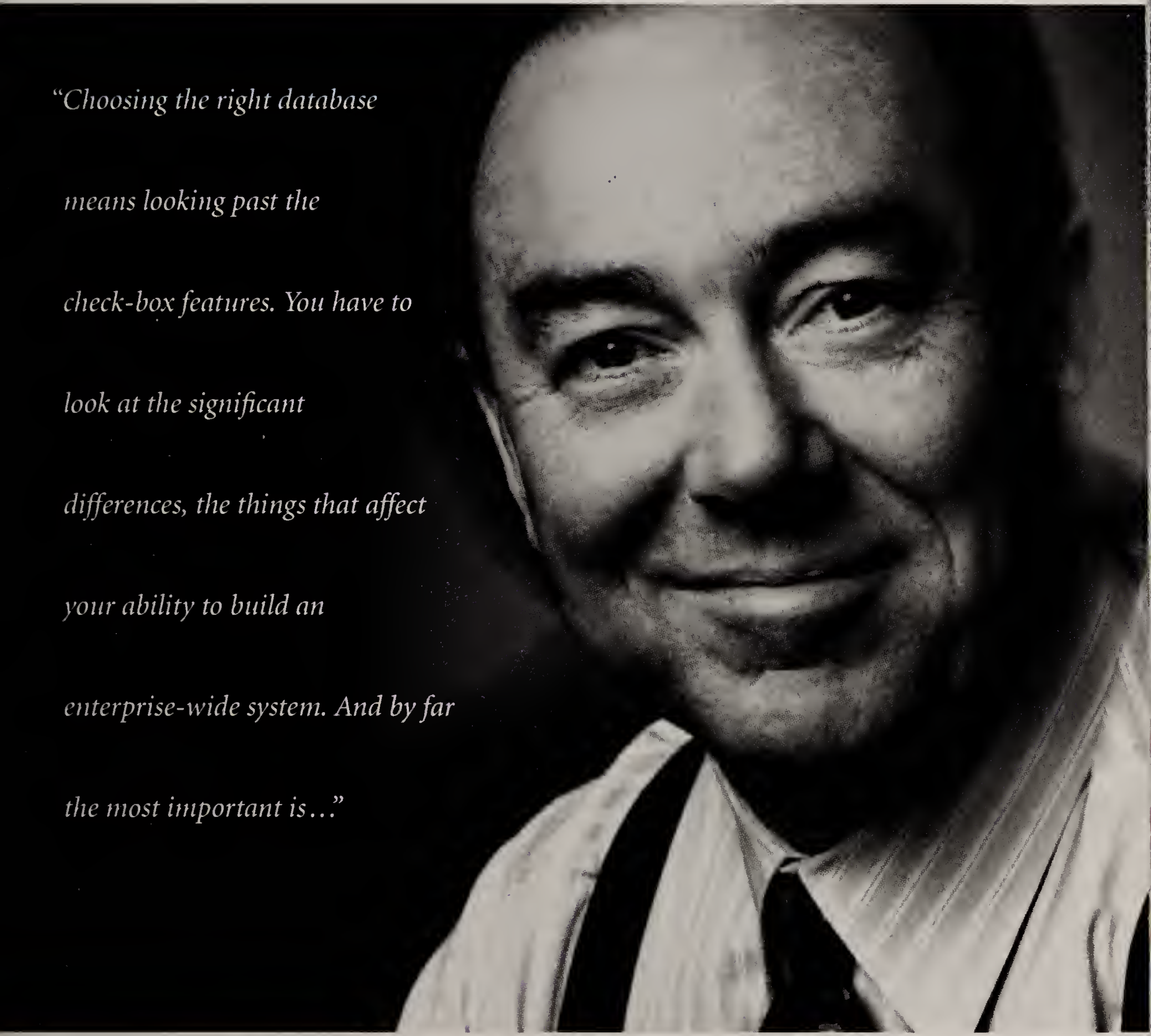

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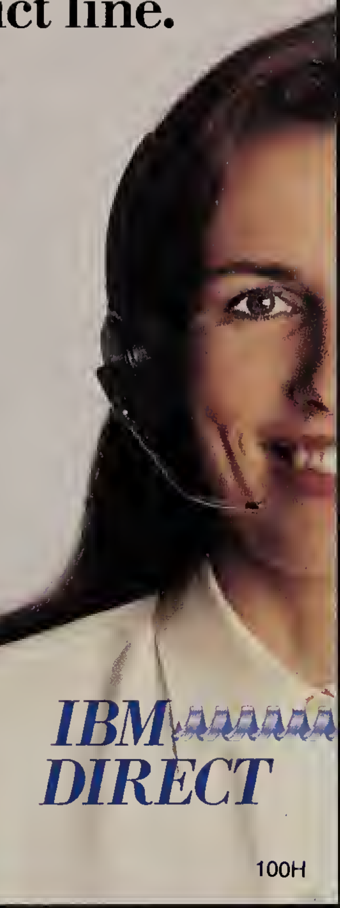

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LETTER FROM THE PUBLISHER

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As we look forward to 1994, I want to remind you, our readers, that *CIO* Magazine will now be published twice monthly.* This move is a direct response to your input and will allow us to deliver more information on business- and technology-management issues and trends than ever before.

To support this frequency increase and ensure the continued high quality of our features and reports, we have made significant investments in editorial-staff expansion. We will also continue to invest heavily in a number of subscriber-research initiatives—both formal and informal—to ensure that the information and services we deliver are in line with your concerns.

As in the past, we'll need your help to stay on target. If you receive survey information from us this year, please take a few moments to give us your feedback. If you have suggestions for article topics or how we can improve the magazine, simply call Editor-in-Chief Marcia Blumenthal or me to discuss your ideas, or write to us.

We also encourage you to take advantage of the educational and networking opportunities available to you by attending our CIO Perspectives Conferences. Held each year in March and October, the conferences provide a unique forum for information exchange in a relaxed learning environment. Our business and editorial staffs also attend the conferences, so it's a great way for you to meet the people behind *CIO* and suggest how we can better serve your needs.

All of us at *CIO* wish you and your companies much success in 1994. And thank you for your support!

P.S. Registration is well underway for the next CIO Perspectives Conference, "Re-Visioning IT: Achieving an Enterprise Perspective," to be held March 13-16, at the Hyatt Grand Cypress in Orlando, Fla. Tom Peters is our featured speaker. For more information, please call our toll-free registration center at 800 366-0246.

**Except monthly in July and August, and a combined Dec. 15/Jan. 1 issue*

Coming In CIO

A Stern Eye On Service

After years of blaming service companies' stagnant productivity growth on a "technology overdose," Stephen S. Roach, principal at Morgan Stanley & Co., is more optimistic. But despite his belief that stressing technology in productivity applications will improve competitiveness, he still has some unkind words for America's "managerial ineptitude."

Giving Consumers What They Want

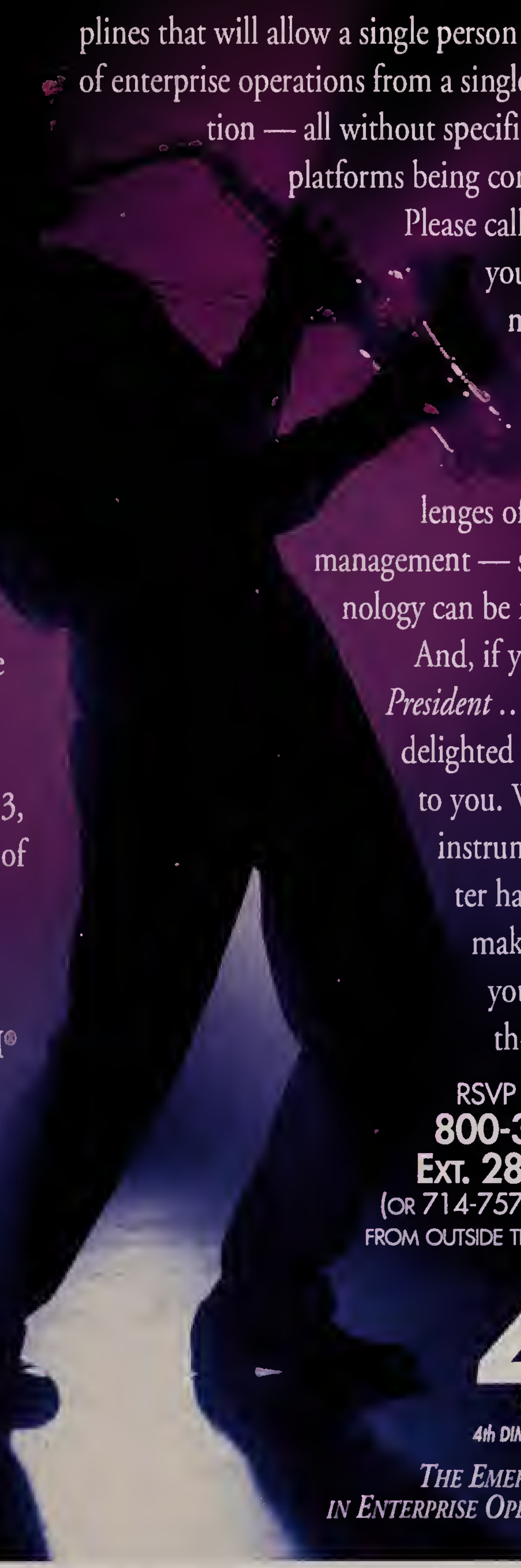
There's no such thing as exact science when it comes to figuring out what consumers want, but a department within AT&T Bell Laboratories is doing its best to eliminate the guesswork. The department is using market-research data gleaned from millions of consumers to set up simulated environments that will help business units develop products and services that meet consumers' needs.

In the Out Door

Sure IS turnover is high, but that's good news for all those people actively looking for new jobs or bored in their current positions. Anyway, the rate of job loss among IS chiefs is comparable to that for other senior executives. And for those who don't find these messages comforting, consider this: Even if you've lost your job, it may not be your fault. *CIO* takes a measured look at the truths and myths of the IS revolving door.

DEAR MR. PRESIDENT:

According to the Gartner Group, "Over half of all client/server projects fail, and 90% of them because the right systems management structure was not in place." Send your CIO to one of our free seminars and spare yourself ... the blues.



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ALTERNATIVE WORK STYLES

AN AERIE OF ONE'S OWN

Why be a salary man—or woman—when you can be a lone eagle? Particularly when some pretty attractive communities are building nests designed especially for these increasingly common birds.

"Lone eagles"—so christened by Philip Burgess, president of the Center for the New West, a Denver-based think tank—are knowledge workers who don't need to report to an office to get the job done. Equipped with computers, modems, fax machines and overnight-mail services, these self-sufficient professionals can live and work anywhere.

The Center for the New West estimates that there are about 10 million lone eagles in the United States, working mostly as consultants, analysts, financial advisers and writers. Several Western communities are

actively wooing these workers, tempting them with such amenities as digital telecommunications services and direct links to the Internet. For these small communities—such as Steamboat Springs and Telluride (both in Colorado), Pullman, Wash., and Buffalo, Wyo.—recruiting lone eagles brings in money without creating the kind of urban atmosphere that often accompanies the arrival of a large company.

Linda Kakela, an economic development official for Steamboat Springs, says the town's lone-eagle program gives it another source of revenue besides tourism. "By attracting the kind of person who can locate anywhere in the valley, we can diversify the economy but still build on our rural roots."

Steamboat Springs, which started its program in 1987, has developed a regional jetport to support these activities. In 1990 it upgraded its telecommunications system to digital switches, and Kakela says it is now working on a five-year telecom plan for the entire Yampa Valley.

For its part, Telluride has instituted a project called In-

GIVING SECURITY A HAND

What do a day-care center at Lotus Development Corp., a cafeteria at the University of Georgia and the Colombian Senate have in common?

A strong aversion to trespassers.

While all three places are protecting something different—young children, an all-you-can-eat food plan and voting integrity, respectively—they have taken the same approach to providing security. That solution: biometrics, a technology that identifies people by personal characteristics, in this case, hand measurements.

Each environment is protected by a hand-scanning device from Recognition Systems Inc. of Campbell, Calif. The technology is based on the assumption that hand geometry is as unique as a person's fingerprints. The system records information about the shape and size of a person's hand and then encodes that data onto the magnetic strip of a plastic card. Anyone wishing to enter a protected area slides the card through a reader and places his or her hand on a scanning device, which compares the length, width and thickness. If the measurements don't match, access is denied.

Another application was tested last summer at two New York-area airports to speed up the processing of frequent international travelers. Without the system, passengers arriving at JFK and Newark airports sometimes had to stand in line for 45 minutes waiting for clearance; with the system, the average inspection time is about 35 seconds per person.

The basic HandKey system costs $2,195. For information, call 408 364-6960. ■

ILLUSTRATION BY MARY ANNE LLOYD; PHOTO COURTESY OF RECOGNITION SYSTEMS INC.

Working alone, it would take this man his entire working life (40-50 years) to completely repaint the 10,000,000 sq. ft. Golden Gate Bridge.

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foZone, which lets residents link directly into the Internet and other online networks.

Burgess estimates that 10 lone eagles living and working in one community will bring in about $1 million in salary each year—much of which will probably be spent in local businesses and paid in local taxes. Another plus: Towns don't have to offer lone eagles the tax breaks that are often dangled to tempt large corporations. With all these benefits, it's no wonder that in towns where the eagles come to rest, so many people are in raptors. ▬

GONE BUT NOT FORGOTTEN

When an anonymous Texan decided to donate his body to science, he probably wasn't thinking of computer science. But the cadaver of the 39-year-old man has been selected to become something of a digital pioneer, according to a recent article in *Fortune*. Highly detailed, 3-D anatomical images of the corpse will soon be available for viewing on 35 CD-ROM disks. The Visible Human Project, sponsored by the National Institutes of Health, will allow students and physicians to explore the human body in new ways.

The process of creating the digital cadaver is turning out to be considerably more stomach-churning than most technology tasks. After scanning the body with magnetic resonance imaging and computerized tomography, researchers at the University of Colorado Health Sciences Center in Denver freeze it and cut it into four pieces. Layers of each piece are shaved off 1 millimeter at a time and photos taken of the remaining cross sections. The images are then digitized and combined with the scans to create 20 billion bytes of data.

Digital body parts can be repeatedly manipulated in ways that real organs will not permit, allowing medical students to dissect a heart over and over, for example. And physicians can use the computerized corpse to plan operations.

The disks should be available to hospitals and medical schools this spring. The data will also be offered over computer networks. ▬

YOUR OUTSOURCING SOURCE

Outsourcing: Even if you're not thinking about it now, chances are someday you will be. With so much at stake, it's nice to know you're not alone.

The Outsourcing Institute was recently formed to provide information and professional networking opportunities for organizations involved in or considering IS outsourcing. "Until now there hasn't been a major forum where corporate management could go to receive

TRIPLE THREAT

Information systems managers don't have to be all things to all people, but they will soon have to become three things to their organizations, according to a report from Forrester Research Inc. in Cambridge, Mass.

The report identifies three roles that CIOs will have to assume as their companies shift to client/server computing:

The Venture Capitalist guarantees a company's technological infrastructure will remain current by becoming immersed in the funding process.

The Super Mentor ensures that skills stay ahead of the curve, with rotational assignments as the preferred method of developing people.

The Public Works Commissioner oversees the flexibility of technology by curtailing standards-compliance units that waste time.

"Realizing the client/server vision is not just a matter of installing new hardware, transferring people or reassigning responsibilities," says Susan Cohen, a senior analyst and author of the report. "The CIO must ensure technology investments are made wisely, skills flourish and the architecture is flexible." ▬

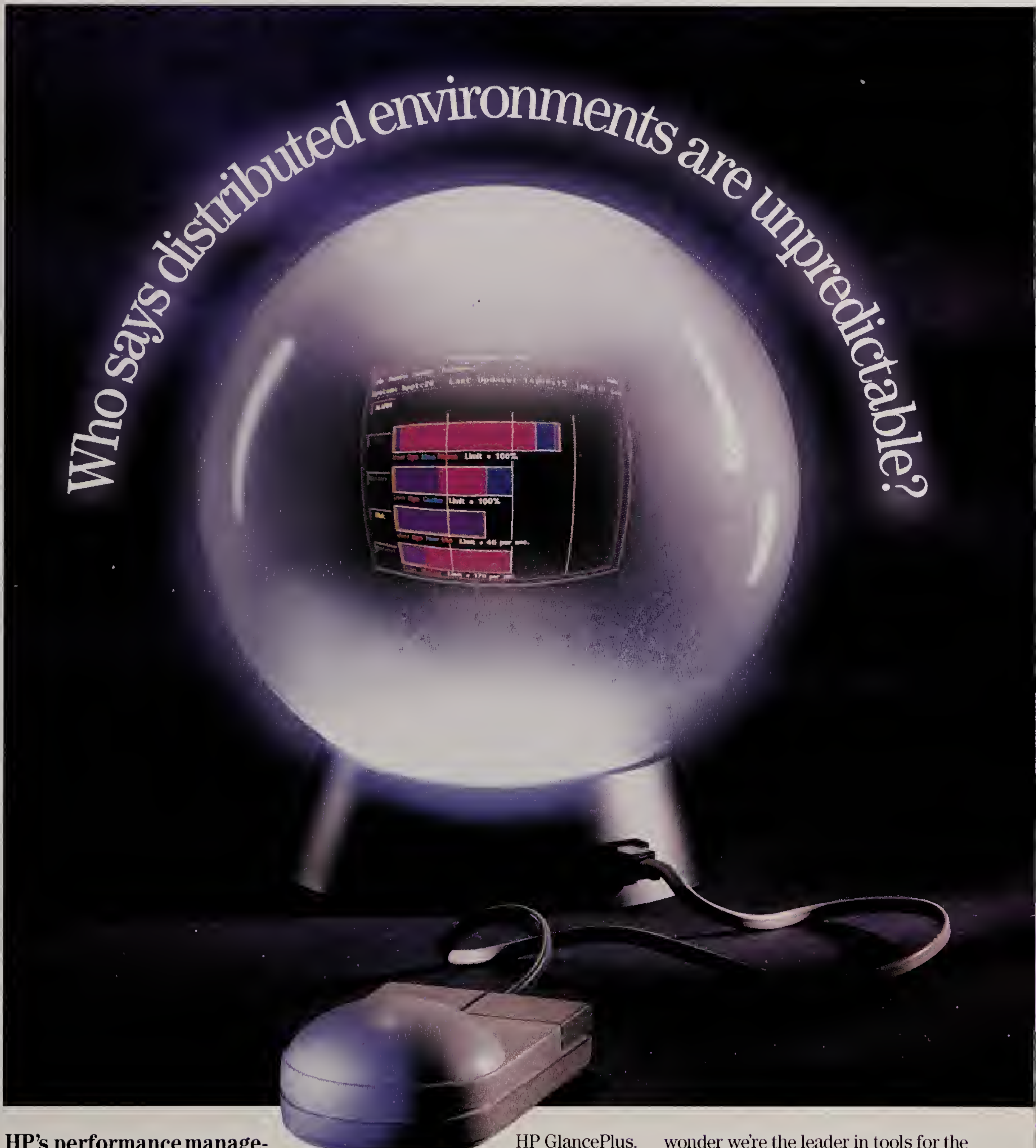
CAREER MOVES

Amtrak has named **DONALD G. GENTRY** vice president of information systems. He will be responsible for all application systems, data-center operations, voice and data networks, and PC and LAN support.

The Wood Co. has named **JEFFREY S. JOLLY** to the position of vice president of information services. His responsibilities include managing and promoting the efficient use of information technology throughout the Allentown, Pa., company.

Texas Instruments Inc. recently appointed **J.R. (BOB) McLENDON** vice president and manager of the company's global information systems and services division. McLendon, a 27-year TI veteran, is responsible for the company's worldwide computer and communications network, as well as for management of IS and CAD/CAM automation. ▬

ILLUSTRATION BY ROBIN JAREAUX



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TRENDLINES

timely and unbiased information on outsourcing issues," says Executive Director Frank Casale.

The Institute will offer seminars throughout the winter that examine outsourcing from the CEO, CFO and CIO perspectives; subjects will include software licensing, contracts, benchmarking and vendor selection. The organization's first annual conference is planned for this fall.

In addition, members have access to the Institute's library and receive a bibliographical database on disk. *The Source*, a quarterly review containing case studies, vendor profiles and analyses, is also included in the membership.

The Outsourcing Institute, located in New York, can be reached at 800 421-6767. ▬

ROAD WORK AHEAD

The information superhighway has yet to be born, but it is already a gleam in many companies' eyes.

In a survey of IS managers at 320 U.S. corporations, more than half said their organizations were already implementing aspects of the information highway, according to the Society for Information Management. SIM sees the most-common applications in EDI and electronic marketing to consumers.

In order to achieve the kinds of benefits anticipated, respondents said, the highway would have to be implemented and widely available in seven years; but most expected 12 years would be a more-realistic time frame. They also believe that the potential benefits to business are greater than to education and consumers; that information exchange will be the principal beneficiary (as opposed to business strategy, opportunities or coordination); and that the highway is essential for U.S. competitiveness. ▬

STORM WINDOWS OF OPPORTUNITY

The observation "Everybody talks about the weather, but nobody does anything about it" just doesn't hold water anymore.

A new product from Strategic Weather Services, in Wayne, Pa., is designed to help retailers anticipate consumer behavior that is affected by that most variable of variables—what it's doing outside. The Long-range Executive Weather Information System (LEWIS) merges historical correlations of weather and consumer-product sales, then combines that information with long-range forecasts to create "weather-effective" merchandise plans. Department stores confidently expecting an Indian summer in November, for example, could plan an off-season promotion on shorts and sundresses. Home-supply stores with foreknowledge of a serious storm could avoid running out of building supplies.

The PC-based system uses predictive models based on proprietary technology to forecast such weather variables as temperature and precipitation. These forecasts are prepared on a weekly basis, up to 15 months in advance for any location in North America, and are updated regularly. Weekly temperature forecasting has an average accuracy of 71 percent, audited and verified by Ernst & Young.

LEWIS, which won an award for best new product at the Retail Information Systems Conference and Exposition, was developed jointly with Comshare Retail. For information, call 215 640-9485. ▬

DATA-CENTER METRICS

CENTER OF ATTENTION

While companies are reaping great rewards from decentralization, client/server and distributed computing, one part of the organization where the benefits are less clear is the data center. Faced with increasing pressure to justify the costs and performance of that function, IT managers are taking a close look at the data center's changing role.

In a recently released update to *Data Center Metrics and Trends,* Nolan, Norton & Co. focuses on changes in spending and staffing levels since 1992. Among the company's key findings:

- ■ Total spending decreased in data centers of all sizes, driven primarily by a decrease in spending on technology;
- ■ Staffing decreased slightly for all but the largest data centers, with the greatest reductions in operations support and technical services;
- ■ Total personnel costs remained virtually unchanged from last year, with higher salaries generally offsetting lower staffing levels;
- ■ The use of automated tape libraries tripled since 1992: The technology now handles about one-third of total tape mounts; and
- ■ Systems-software spending remained virtually unchanged.

Nolan, Norton notes that, while the resources required to support a data center are decreasing, improvements in staff efficiency are slowing because many organizations have already taken advan-

ILLUSTRATION BY MARY ANNE LLOYD

WHY IS A COMPANY
YOU'VE NEVER HEARD OF
ALREADY AT WORK
FOR SOME OF THE
BIGGEST CORPORATIONS
IN THE WORLD?

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WORKING TODAY FOR J.P. MORGAN, BANK OF AMERICA, GOLDMAN SACHS, MERRILL LYNCH, CONRAIL, UNION PACIFIC RAILROAD, SOUTHERN PACIFIC RAILROAD, AT&T, INFONET, IBM, ADVANTIS, AND THE DEFENSE LOGISTICS AGENCY.

According to a recent Infonetics Research survey, the average *Fortune 1000* company loses $7.5 million a year on LAN outages alone—and even more on other systems or network outages. These companies just can't afford to operate in this fashion, so they've turned to MAXM for help.

Help with integrating all the diverse management systems and technologies in their enterprises. Help with freeing IT personnel from the drudgery of monitoring vendor-specific systems. Help with pinpointing problems—no matter what the source—and resolving them quickly.

The results? MAXM dramatically reduces the downtime that undermines mission-critical operations, and it increases operator productivity at the same time. It vastly increases system and network resource availability, ensuring that users are satisfied and productive...today, and as the enterprise evolves. ■

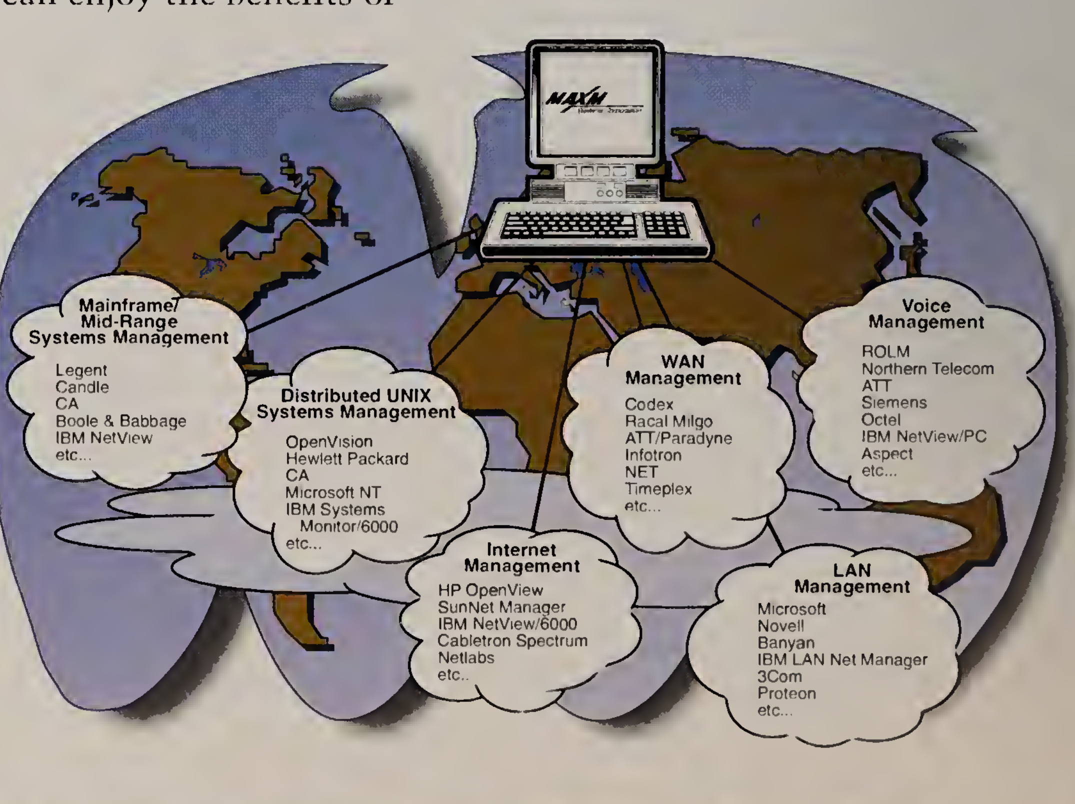
WHAT IS MAXM?

MAXM is the world's leading client/server based application for Automated Enterprise Management (AEM)—the necessary integration of well established and emerging management disciplines. MAXM gives you a consolidated, integrated view of all the elements and management systems in your enterprise—on one powerful, centralized workstation, which can then be distributed as directed. It can automatically perform scheduled tasks—and automatically respond to network and systems events—that affect the overall efficiency of your enterprise systems.

As your company moves toward today's powerful new client/server architectures while managing existing complex, multi-vendor systems and network configurations, you're facing challenges that were unheard of just a few years ago. As the most powerful AEM technology on the market today, MAXM will help you meet those challenges, so that you can enjoy the benefits of distributed computing within your entire enterprise—and provide better service to end users, more efficient use of resources, greater value for customers, and bigger profits for your business. ■

MAXM INTEGRATES ALL THE TECHNOLOGIES IN YOUR ENTERPRISE.

MAXM's centralized or distributed operator workstations display information from all the disparate, vertically managed systems in your enterprise—voice and data systems, LANs and WANs, security and environmental systems—to provide the end-to-end visibility you need to readily solve problems as they occur, before



they affect your users. All the alarms and error messages, from virtually any component in your operation, are integrated into one consolidated view. And because MAXM can share management data with IBM's NetView and Sterling's NetMaster management systems, you get an integrated view of SNA and non-SNA environments alike.

Within one Wall Street-based financial enterprise, MAXM has integrated the alarm streams of dozens of dissimilar platforms. Reports this customer's VP of Operations: "Our technicians no longer run from screen to screen to scan and interpret different management consoles — and no longer miss important alarms and errors."

What does this mean for you? Consider the savings detailed by one customer in justifying the purchase of MAXM: $1,275,000 in no-longer-required staffing increases, $550,000 in a reduced need to develop and enhance existing management tools, $52,000 in reduced training expenses—all in the first year of operation. Indeed, our customers report that MAXM pays for itself in as little as a few months' time. ■

MAXM AUTOMATES THE TASK OF MANAGING YOUR COMPLEX MULTI-VENDOR SYSTEMS AND NETWORKS.

Pre-defined or user-defined rules and script files describe how MAXM will interface with the managed objects in an enterprise. MAXM can check hundreds of key devices at regularly scheduled intervals, resolve many problems without operator intervention, and alert the appropriate operator when intervention is required. You can filter alarms, and prioritize them to highlight those with mission-critical implications. As one MAXM customer puts it, "This lets you give your operators only those messages that are critical to their responsibilities." When the daily volume of messages becomes unmanageable, whether the quantity is six thousand or — as in this user's operations department — even one million messages a day, MAXM's filtering and prioritizing abilities are vital to your success.

The results? A proactive, rather than reactive, process for keeping your systems up and running. A way to identify "chronics"—network events that persistently undercut operations—and to resolve them before your internal users, or external customers, even know they exist. The removal of operator error—which, according to a study by KPMG Peat Marwick, causes 50% of all network outages—from the enterprise management equation. Freedom for your valuable IT managers to perform more strategic tasks. And, in a business climate where a few minutes' downtime can cost thousands of dollars—as it does in many transaction processing environments—enormous savings for your organization. ■

> **"MAXM IS ELEGANT IN ITS SIMPLICITY. IT DOESN'T CLAIM TO DO EVERYTHING, BUT WHAT MAXM DOES, IT DOES EXTREMELY WELL."**
>
> ***A SENIOR IT MANAGER IN THE WORLD'S LARGEST TELECOMMUNICATIONS COMPANY***

A CASE STUDY: MAXM IN OPERATION.

In 1991, MAXM was installed in one of the world's largest financial institutions. This corporation needed to consolidate its support operations—not only to reduce staff and facilities, but also to increase customer service by improving systems availability and reducing the number of terminals and messages requiring human monitoring. Networks were becoming more complex, and the demand for solutions was on the rise. And, particularly with respect to network and system monitoring, 1980s computing technology was inadequate to the company's challenges. Eleven different operations centers, including three in Europe, had dozens of terminals that had to be scanned continuously for alert messages and alarms.

Since implementing MAXM, this corporation has increased the scope and number of its global financial services while decreasing the number of its worldwide technical support centers. It now has a single point of control for viewing its diverse technical operations—including SNA links, LANs, the company's private network, and the networks of outsource vendors. Not only have the eleven operations centers been consolidated into a single staffed facility in Delaware and a "lights out" facility in New York, but the enterprise network now supports three times as many applications as before. A consolidated user help desk, which now responds to 95% of all calls for assistance without escalation, is staffed around the clock. With MAXM, operators can automatically check important systems at, say, 2:00 a.m. daily. Problems with applications and other key systems can be resolved automatically, and MAXM alerts an operator whenever intervention is needed—so that problems can be resolved before the workday's mission-critical operations get underway. MAXM's AEM capabilities have helped this customer reduce the volume of incoming system alert messages by more than 80%. AEM collects, filters, and prioritizes messages and alarms from dozens of different management facilities.

MAXM is at work today for many of the most demanding, mission-critical enterprises. And MAXM is dedicated to providing you with the most efficient, cost-effective Automated Enterprise Management solutions available in the industry...*today.* ■

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Regards,

Jack Reis
President, MAXM Systems Corporation

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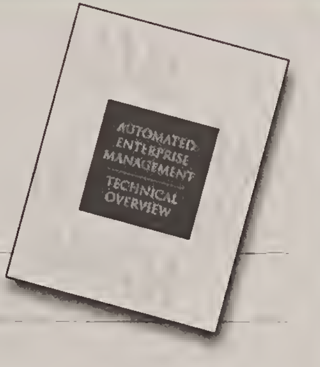

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tage of automation.

The firm maintains that, decentralization notwithstanding, the data center still plays a valuable role in corporate computing. The key is integrating the center into an environment that incorporates mainframe, midrange and distributed technologies.

Nolan, Norton's recommendations:

Focus on a strategic use of technology to control IT costs

Automate as many data-center operations as possible

Cultivate the right mixture of staff skills

Ensure that the company's business needs are being served by information technology

Develop a consultative role for the IS department that covers the entire computing environment

Update the applications portfolio for greater utility and higher business value

Develop a clear infrastructure strategy for IT that is linked to the business strategy and communicate it throughout the organization.

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NEW INKLINGS

If you want your employees to be heard from and not seen, a new publication from MarketForce Inc. may help.

Telecommuting Times, published quarterly, is designed for managers, human-resources executives and consultants interested in moving employees out of the workplace and into the home. It provides information on how to develop and oversee a telecommuting program and how to select, manage and assess telecommuting employees.

The pilot issue, which is available free to interested managers, features region-by-region information on employee trip-reduction requirements mandated by the Clean Air Act, as well as the case history of an effective telecommuting program developed by the City of Los Angeles. Regular departments will include interviews with experienced telecommuters and telecommuting managers, and a "Manager's Notebook" of how-to information.

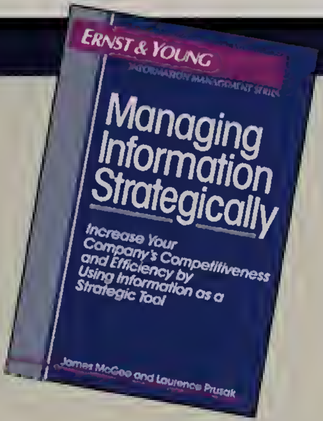
A subscription is $40. Call 215 663-0349.

OFF THE SHELF

MANAGING INFORMATION STRATEGICALLY

INCREASE YOUR COMPANY'S COMPETITIVENESS AND EFFICIENCY BY USING INFORMATION AS A STRATEGIC TOOL

By James V. McGee and Laurence Prusak
John Wiley & Sons Inc. (New York), 1993
244 pages, $34.95


Ernst & Young
Information Management Series
Managing Information Strategically
Increase Your Company's Competitiveness and Efficiency by Using Information as a Strategic Tool
James McGee and Laurence Prusak

Imagine yourself a tired traveler in a strange airport, bags weighing heavily on your shoulders. You hurry to the American Airlines ticket counter, and as your bags slide to the floor, an agent greets you by name and asks about your trip to Baltimore last week.

Granted, the headlines American Airlines has garnered of late have been about subjects other than the company's excellent customer service. But *Managing Information Strategically* is a good reminder of what Crandall and company do well. And even companies that don't want to imitate American's labor relations may want to imitate its approach to providing customers with personalized attention by leveraging not just information technology but information itself.

Authors James V. McGee and Laurence Prusak, founding members of Ernst & Young's Center for Information Technology and Strategy, use examples from real companies to illustrate the role of information in designing and executing competitive strategies. Executives developing a strategic vision must consider where their products and services excel, say the authors, defining market segments and customers, as well as assessing their competitors. To do this successfully they must learn to manage internal information—as American Airlines does—in order to differentiate themselves in the marketplace. In this scheme of things, information is treated as a resource equal in value to capital, labor and technology.

From strategy design, the authors move to consider information's role in improving organizational processes. Here they focus on defining information-management processes, designing information architectures and managing behavior with respect to information, particularly the politics of access. Finally, strategic design and execution come together in a discussion of using information-based management to align operations with strategic goals.

Throughout the book, the emphasis is on the information aspect of information technology. The authors explain how a company's approach to collecting, analyzing and disseminating data affects its ability to provide employees with the information they need to make the right decisions. Only after a company has learned what information will improve its operations should it implement technology to support its goals.

Managing Information Strategically makes it clear that the work doesn't end at designing, implementing and learning how to manage an information structure. In a world of rapid change and instantaneous communication, the real challenge is to make the organization as dynamic as today's competitive environment.

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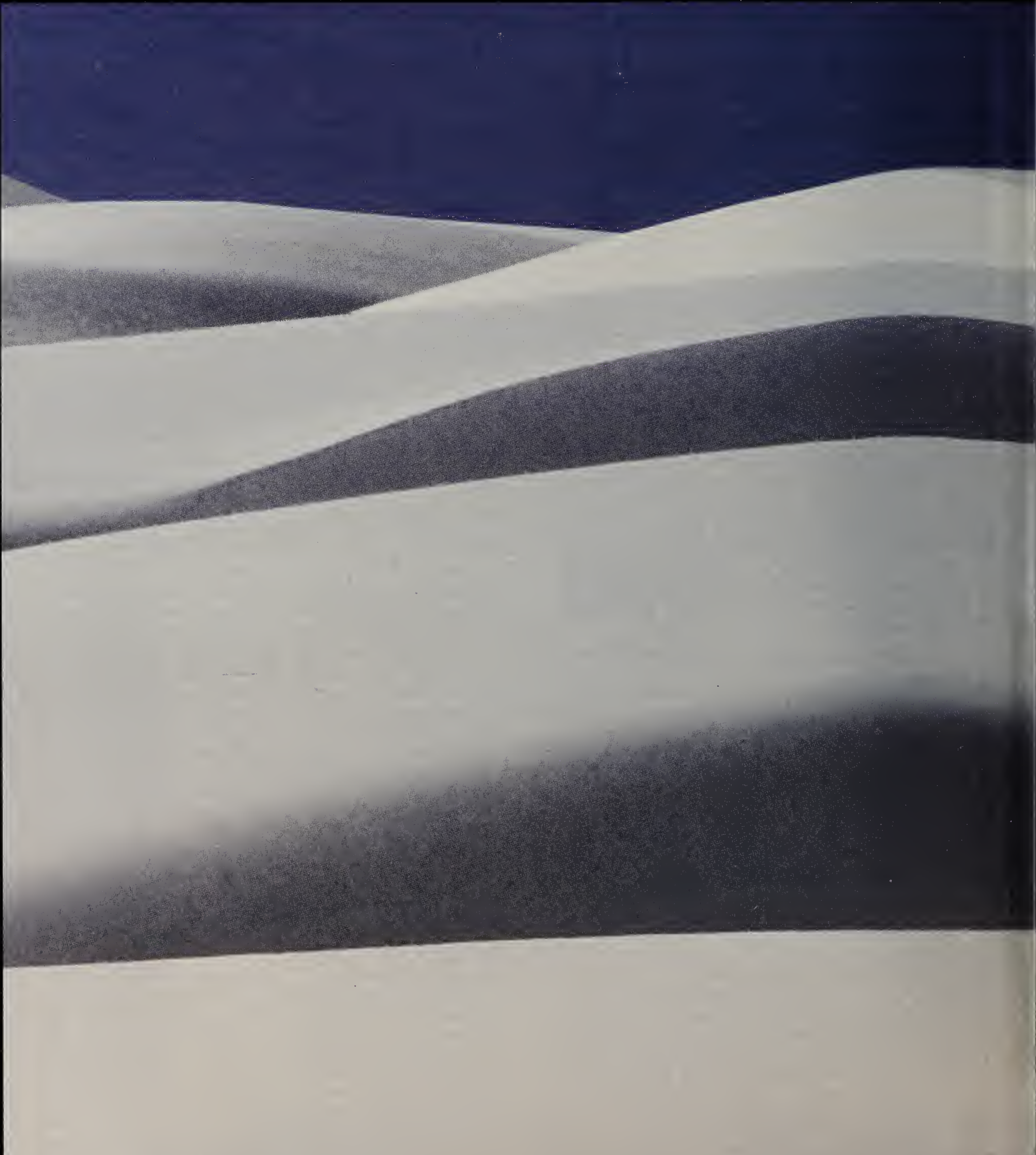

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The Full Spectrum

The success of the IS function depends upon a complete and balanced organizational structure. Sometimes the staff is not to blame for IS malaise.

BY N. DEAN MEYER

Don't blame your staff for poor performance if the organizational structure of the department is impeding their efforts. Structure is the root cause of many common IS maladies, including a lack of customer focus and strategic alignment; a slow pace of innovation and resistance to new technologies; a disjointed architecture; high costs; deficient methods; and inadequate teamwork. The symptoms often point deceptively to people, methods or cultural issues. But if the cause is an inappropriate structure, nothing short of a reorganization will improve the performance of the IS function.

How will you know if this is the case? A simple exercise can help you evaluate the health of your IS department's organizational chart. This diagnostic technique is based upon the following seven functional building blocks of structure:

1. Machine-based service bureaus own and operate information systems for use by others. They include the computer center, network operations and printing services.

2. People-based service bureaus provide routine services that are performed by people rather than machines. They include hot lines, installation and repair, education, technical writing, procurement and departmental administration, as well as other services that help others in the department produce information products and assist clients in using them.

3. Applications technologists design, procure, build, maintain and support data-specific software for transactions processing. They include most systems analysts and programmers.

4. Base technologists design, procure, build, maintain and support all technologies other than transactions-processing applications, including systems software and hardware, telecommunications-, software- and information-engineering, end-user computing and information disciplines such as artificial intelligence.

5. Architects facilitate agreement on standards and guidelines that allow technologists to act independently in response to clients' business needs and yet still progress toward integration.

6. Strategic consultants are the primary liaisons to clients. They act as account executives and call on key opinion leaders to transform business strategies into information requirements without bias for any subset of the IS toolkit.

7. Retail consultants offer business-driven advice, operate demonstration centers and perform marketing services via user groups, newsletters and awareness events.

Even if all seven of these functions are present in an IS department, the way they are assigned to specific jobs varies widely and has a lot to do with the success of the people in those jobs. A healthy IS organization is char-

ILLUSTRATION BY MIN JAE HONG

Bigger earnings. More satisfied customers. Higher employee productivity. Greater shareholder value. These are the kinds of results you can get when you reengineer.

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acterized by three conditions:

First, it includes all seven functional building blocks. If any are missing, or are performed by many people part time but nobody full time, critical activities will not be performed as often or as well as they should be. For example, if there is no appointed architect, one would expect a lack of standards and guidelines as well as poorly integrated networks.

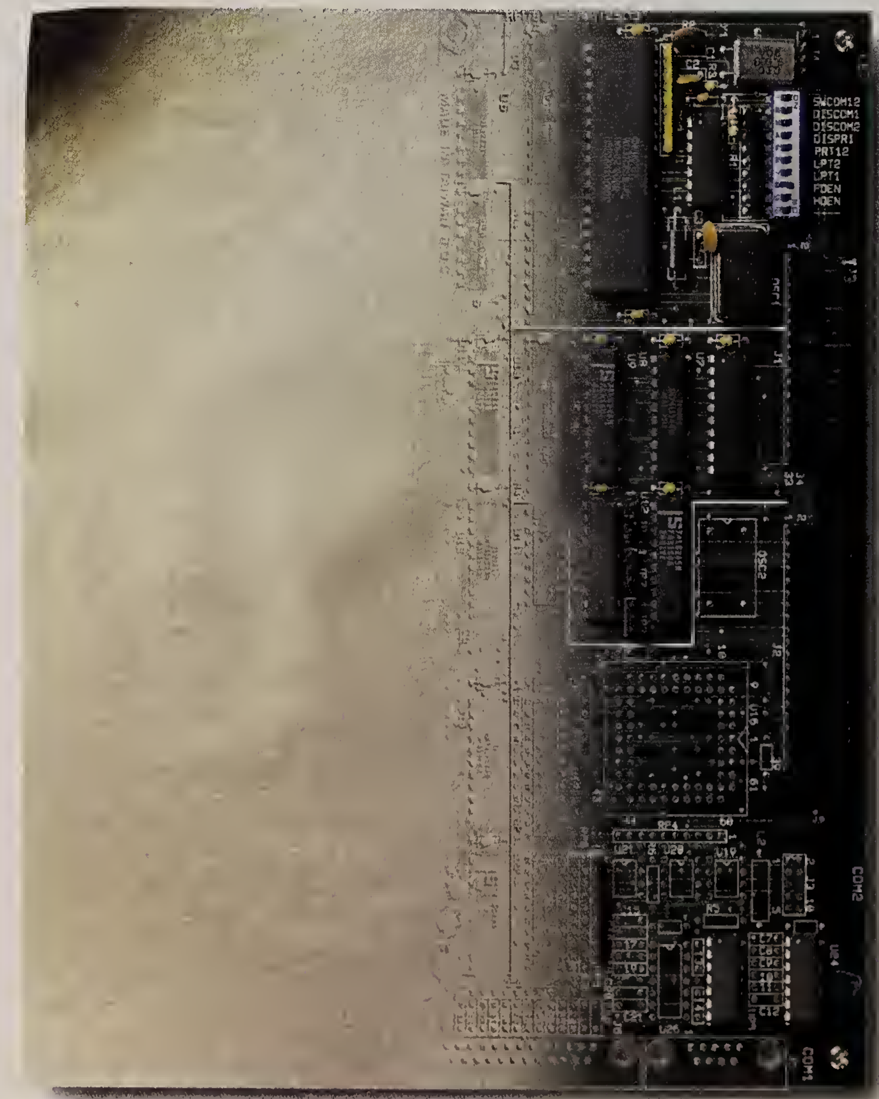
Second, a healthy structure does not combine building blocks within jobs. When these functional building blocks are mixed in a job definition, conflicts of interest result that will lower performance. For example, employees in a function that combines service bureaus and technologists must keep things running smoothly and pursue innovations that disrupt smooth operations. In this situation, invention generally suffers.

Similarly, problems occur when someone is responsible for one area of technology and for unbiased business diagnosis. For example, the same person might develop financial applications and act as liaison to the finance department. As a technologist, that person is expected to specialize in a specific technology and will therefore be biased toward it. But as a consultant, he or she is also expected to provide unbiased, business-driven advice. Technology-driven change is generally the result, with little attention to strategic needs. This is one of the most-common structural flaws.

When a group is expected to perform more than one function, there can be two problems: People are expected to be experts at too many things, and they are asked to pursue conflicting objectives.

Finally, in a healthy structure all members of each building block are kept together. If a group, or "campus," of like experts is scattered, either within a central IS department or into other departments through decentralization, a number of dysfunctions occur:

- Specialization is reduced because each small group must cover the entire discipline. This results in a reduction in quality, productivity and pace of innovation.
- Professional exchange among peers within a specialty is reduced, slowing the pace of learning and innovation and reducing productivity.
- Replication of efforts is more likely; for example, the opportunities for reusable code are reduced. Again, the result is lost productivity.
- Expertise that develops in one location may not be accessible to others, resulting in either reinvention or lost opportunities.
- Architectural disintegration is



likely, since each pocket will probably develop its own culture, practices and standards.

Guided by these three principles, a simple graphical technique can point out potential structural dysfunctions. This exercise is most effective when the IS management team participates.

First, using a black marker on a flip chart, each manager draws his or her piece of the organizational chart, extending it down one or two levels. Then, each uses colored pens to represent the seven functional building blocks, putting a stripe of the appropriate color on the chart next to anyone who is performing that function. For reasons that will be obvious, this is called the "rainbow exercise." Here's how to analyze the results:

Gaps occur where a function is missing altogether or is performed only part time by people whose primary focus is another function. (Look for a missing color, or one that appears intermittently throughout the charts as a part-time job—indicated when multiple colors are next to one person on the chart—rather than as one person's full-time job.) This leads to a lack of professionalism and engenders slow progress, faulty methods and poor quality. Gaps also cause spotty coverage: If no one is responsible for a function in its entirety, then no one is paid to ensure that new technologies and techniques are researched and supported. As a result, there is no guarantee that the IS function's product line will remain comprehensive.

Rainbows occur where a group is expected to perform more than one function. (Look for groups marked with more than one color.) This can lead to two problems: too much ground to cover (people are expected to be experts at too many things) and conflicts of interest (people are asked to pursue conflicting objectives). The combination of technologists with service bureaus or consultants are common examples of the latter.

Split campuses are where like functions are spread about throughout the organization. (Look for a color that appears in more than one group.) This can result in loss of peer interaction (people are less likely to learn from each other); architectural fragmentation (it is difficult to get like experts together to agree upon standards); and overlapping territories (two groups compete in the provision of a function, typically leading to territorial friction).

The rainbow exercise is a quick way to diagnose problems with your organizational structure and to determine whether restructuring can help.

Any structure can be made to work. But why waste people's energy overcoming poor structure? A healthy organizational structure is the starting point for building a world-class, high-performance IS function. CIO

N. Dean Meyer is president of NDMA Inc., a Ridgefield, Conn., consultancy that can be reached at 203 431-0029.

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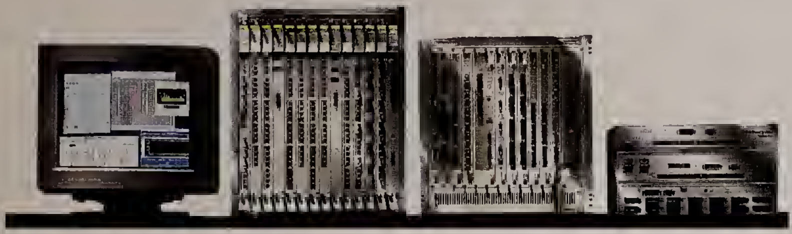

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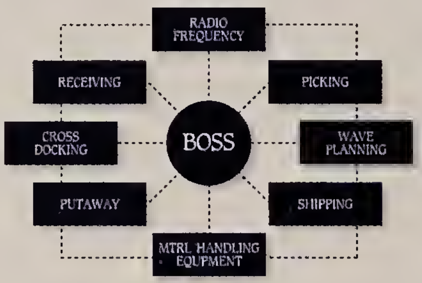

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The 1993
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MANY HAPPY RETURNS

The stakes are high for IS executives under pressure to deliver systems that pay off in both business value and hard-dollar return. Our ESPRIT award program recognizes the achievements of strategically minded CIOs and their business-executive partners.

VALUE SYSTEMS

The companies honored in this year's ESPRIT awards have plenty to crow about: successful systems that return real value to their organizations and the business-IS synergies that made those systems possible.

Page 30

A CLEAN BILL OF HEALTH

An image-based claims-processing system has enabled Complete Health Services Inc. to process claims in one-third the time with fewer employees.

Page 32

A VALUABLE ECO-SYSTEM

A GIS helps the South Florida Water Management District crack down on violators by boosting its own productivity.

Page 36

THE CRITICAL LINK

By practicing what it preaches, networking vendor SynOptics Communications Inc. achieved stellar growth.

Page 40

THE RIGHT TICKET

Although they still hate the fines, violators now respect the Chicago Bureau of Parking, thanks to technology that improved the enforcement of parking laws.

Page 52

SUPPORTING A HOUSE OF CARDS

AT&T's Universal Card Services Corp. has built its success in part on a customer-service platform that delivers both satisfaction and savings.

Page 58

PUTTING THE FINGER ON FRAUD

The L.A. County Department of Public Social Services finds a foolproof way to staunch costly welfare losses without scaring off legitimate clients.

Page 64

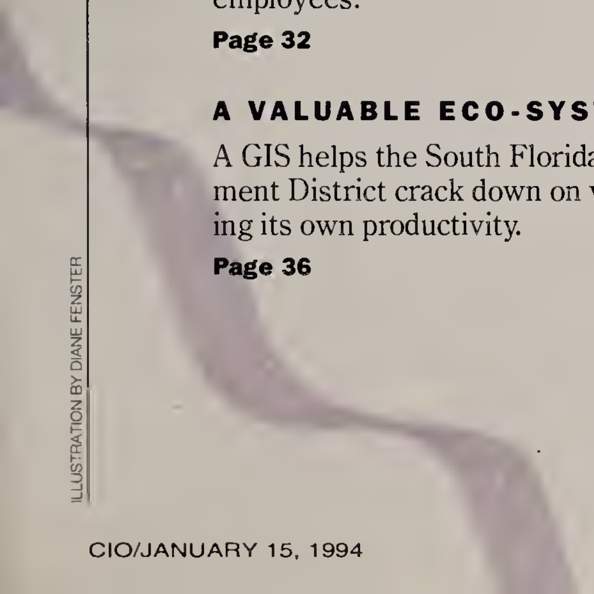

ILLUSTRATION BY DIANE FENSTER

The 1993
ESPRIT
AWARDS

VALUE SYSTEMS

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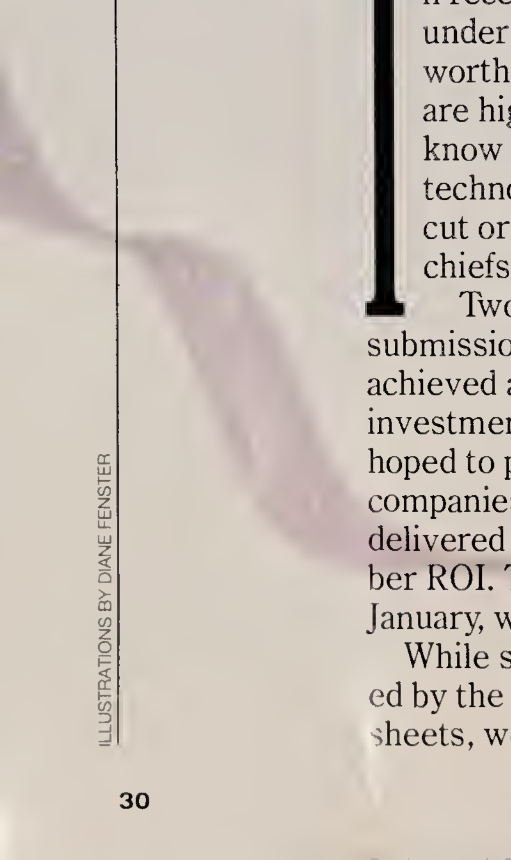

ILLUSTRATIONS BY DIANE FENSTER

In recent years, IS executives have been under the gun to justify and prove the worth of proposed systems. The stakes are high, and beleaguered CEOs want to know that investments in information technology will pay off, whether in costs cut or markets gained. For many IS chiefs, these are uncharted waters.

Two years ago, *CIO* issued a call for submissions from companies that had achieved and could document real return on investment from information technology. We hoped to provide readers with examples of companies where successful systems had delivered both business value and hard-number ROI. The results, chronicled in *CIO* last January, were impressive indeed.

While such companies are amply rewarded by the improvements in their balance sheets, we thought their accomplishments deserved further recognition. So, together with Booz-Allen & Hamilton, we created the ESPRIT awards, honoring companies for excellence in strategic partnering for return from information technology.

This year's award recipients share a common approach to the role of technology in their organizations. None regard IS merely as an enabler, reacting to one-way requests from the business side. Nor is IS its own champion, independently determining the system's business case and trying to sell it to top management. Rather, IS understands what the business needs to achieve, and business-unit executives understand how technology can help them realize their goals faster, better, cheaper.

Because these companies' business capabilities and the technology that enables them have grown together, the results have been

DECIDING FACTORS

The judges based their decisions on the following criteria

The Importance of Technology to Achieving Results

The judges looked at whether the business need could have been satisfied without the system—was it the only way to get the job done, the easiest way, or were there equally effective alternatives?

The Pervasiveness of Technology in the Solution

How much of the overall process was touched by the technology? Did the nominees automate a small but critical component, or was the system used in all parts of the process?

Strategic Partnering

This was the scale tipper. The judges tried to reward true partnering, where the user and technology communities were fused at the hip throughout the process so that each could bring its best to the endeavor.

Return on Investment

Relative ROI among the finalists was not a big factor in selecting the winners. Although showing significant ROI was critical to making the first cut, by the final stage it was considered a given.

high return and high value. This was made possible through partnerships between IS and the business units. Such collaborations worked best when the partnerships began early in the process, with a general discussion of what the business side wanted and needed and what technological capabilities IS could provide.

Booz-Allen assumed the responsibility of examining the nominated systems' strategic value to their organizations and their ability to deliver significant ROI. After an initial winnowing, teams of analysts began going through the applications in detail. Their objective was to learn what each system was doing, to verify that the benefits claimed could be directly attributed to the system and that the costs were fully reported. The teams then conducted on-site meetings with the applicants and others involved in developing, implementing and using the systems. They also observed the systems in action to determine their impact on the business.

After the site visits were concluded, the teams presented their cases to one another and to Booz-Allen executives. Finally, they delivered positioning statements, along with their notes and the original applications, to a panel of distinguished judges (see list).

The judges spent a day together in Dallas evaluating and discussing the material, asking tough questions of Booz-Allen executives and debating each system's value (see box for a description of the criteria). They reached full agreement on the six winners by the end of the day.

We applaud our 1993 ESPRIT award recipients and all the nominees who participated in the process. We hope that, from their example, others will learn the value of teaming IS with business to further their organizations' goals.

– Marcia Blumenthal
Editor-In-Chief, CIO

– Martin E. Silverman
Vice President,
Booz-Allen & Hamilton

THE JUDGES

John Bohane

Bohane Associates

Former group president,

Readers Digest

Former vice president,

Time Inc.

Max D. Hopper

Senior vice president of

information systems

American Airlines

William E. Kelvie

Executive vice president and CIO

Fannie Mae

Donald Lasher

President of the information

services division

USAA

Sirkka Jarvenpaa

Associate professor of

information systems

Department of management science

and information systems

University of Texas at Austin

The 1993
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AWARDS

A CLEAN BILL OF HEALTH

An image-based claims-processing system has enabled this health insurer to process claims in one-third the time with fewer employees

BY CAROL HILDEBRAND

COMPLETE HEALTH SERVICES INC.

Take one managed health-care company, growing at a furious rate. Blend in a paper-based claims-services system, countless forms and constant paper shuffling among departments. Add a pinch of slow data entry and a dash of 30-day paper backlog. Pour into a building that's getting too small for the company. What do you get? A recipe for disaster.

These are the ingredients that Complete Health Services Inc. (CHS) had at hand when it elected to create I-MAX, a LAN-based system that has nearly eliminated paper and rejuvenated productivity in all the services departments. In the process, the system has reduced costs by a little more than $3 million in its three years of operation.

The overriding impetus behind I-MAX, according to CEO William Featheringill, was to increase service response times and efficiency in an intensely competitive industry. It has worked: Claims are now processed and paid, on average, within 10 days (compared with an industry average of 11.2 days, according to a survey by the Life Office Management Association), and 95 percent of customer telephone calls are answered within 30 seconds. These improvements did not come at the price of an inflated staff, however. Much of the reduction in the costs of claims services has come from the Birmingham, Ala.-based company's newfound ability to keep personnel numbers almost static.

In fact, the system has enabled the company to cut personnel by almost 20 percent in the claims-examination department and by more than 20 percent in customer service, mostly by making it unnecessary to hire more people while the company continued to grow at a rapid rate, according to Director of MIS Richard Harley. For example, the claims department employed 88 people in 1993; without I-MAX, Harley estimates, it would have needed 106. This has saved the department more than $1.7 million in personnel costs since 1991. Overall personnel savings total more than $2.3 million.

To achieve these benefits, CHS's IS executives worked with top business-unit

RICHARD HARLEY (LEFT) AND WILLIAM FEATHERINGILL HAVE SEEN AN INCREASE IN DATA-ENTRY SPEEDS FROM 150 TO 600 CLAIMS PER PERSON PER DAY SINCE INSTALLING I-MAX.

management, including Featheringill, who was one of the system's chief backers. According to Harley, this teamwork was vital to getting I-MAX in gear. "You have to have that kind of a buy-in" for such a major undertaking, he says.

In 1991, CHS was hiring employees so fast it threatened to outgrow its headquarters, and the firm could not keep up with the demand for services. With 2,483 percent growth over the past five years, this isn't all that surprising. (CHS, which expects revenues of about $290 million for 1993, was named one of the fastest-growing companies by *Inc.* magazine in both 1992 and 1993.)

Featheringill says he used to receive three or four telephone calls a week from irate customers whose claims had fallen into a bureaucratic black hole. Once Featheringill became aware of a customer's problem it was quickly fixed, "but it bothered me that it had to come all the way to me" before it got resolved, he says.

Although the claims themselves were processed on three IBM Corp. AS/400s, the services departments were still in paper mode. Harley says this caused "an administrative nightmare" as claims were lost and interdepartmental communications bogged down. Moreover, enormous backlogs loomed as mailroom personnel struggled to get incoming claims out to the departments. "It got to the point where there was probably 30 days' worth of work sitting out on the floor somewhere," he says.

The paper monster spawned hatchlings as departments insisted on filling out more paper forms when signing claims folders over to other groups. Rogue filing systems sprouted as each employee sought to keep copies of papers to which he or she needed fast access.

CHS tried throwing more people at the problem; some employees came in at night just to do filing, and the company hired 50 temporary workers to try to get caught up. "If we hadn't fixed this [problem], we would not have had the floor space for the amount of people we'd be needing," Harley says.

So CHS, working with Birming-

TECHNICAL PROFILE

OLD SYSTEM

None. Essentially, the services departments depended on paper documents and sneaker net to get the job done

NEW SYSTEM

Software: Several executable modules codeveloped by CHS and MACESS Corp.; Novell Inc.'s Btrieve used to store the claims information

Hardware: 486-based servers, including a NetFRAME Systems Inc. 450 server as a production and database server; 386-based desktop environment; Eastman Kodak Co. 9000 series scanner in the mailroom; images stored on CD-ROM, mastered in-house

Architecture: 1,000-user Novell NetWare LAN with gateway links to the AS/400-based claims-processing system

PHOTO BY MARK BONDARENKO

THE BOTTOM LINE

	First Year	Subsequent Years (average)
GROSS RETURN		
Reduced operating costs	$ 596,581	$ 1,168,781
Reduced capital invest.	$ 137,026	$ 165,495
Indirect cost avoidance	$ 122,750	$ 136,000
Total annual ROI	$ 856,357	$ 1,470,276
COST		
Technology purchases	$ 829,280	$ 291,024
System develop. & implement.	$ 52,091	$ 4,341
Ongoing system maint. & support	$ 21,000	$ 84,000
Ongoing system operations	$ 40,000	$ 108,700
Total annual cost	$ 942,371	$ 488,065
Net annual ROI	$ (86,014)	$ 982,211.25

Figures are based on a five-year projection. This system is in its fourth year.

ham-based MACESS Corp.—a developer of document-control systems for managed health-care firms—put together I-MAX. The image-based claims-processing system, which runs on a local area network, automates the entire claims-services process and includes a tracking system to ensure that claims cannot be lost.

With I-MAX, an incoming claim is scanned into the system the same day it is received (the company handles about 5,000 claims daily). Because scanning gets claims into the system so quickly, fewer redundant claims are sent, lightening the workload and reducing the chance that a provider will be paid twice.

The claims are automatically distributed to data-entry personnel, who use computer assistance such as online lookup tables to enter the data. Harley says I-MAX has boosted productivity tremendously. Data-entry speeds, for example, have gone from 150 to 600 claims per person per day, while data-entry errors have decreased from 6 percent to 1.5 percent.

> *To achieve these benefits, CHS's IS executives worked with top business-unit management, including Featheringill, who was one of the system's chief backers.*

Once the claims are entered, they are placed into electronic folders and routed to appropriate personnel, such as claims examiners or adjudicators. The folders contain the claim image, benefits information and any correspondence, including electronic mail and telephone calls. The 400-node network is tied into the AS/400s through gateways, so examiners and customer-service representatives have instant access to the status of a claim as it gets processed.

Say, for example, that an examiner has a question about a particular claim. He or she can electronically zap the file over to the medical-management department, which can instantly access the folder. Workers no longer have to manually check files in and out of departments. An online "tickler" file keeps track of where each folder is and how long it has been there. This and the fact that management can track claim-related telephone calls help CHS adhere to its corporate mandate of a 48-hour response time.

"Previously," says Featheringill, "it was pretty easy to send a [paper] folder over to another department and have them sit on it." With I-MAX, says Harley, "you cannot let something fall off your desk."

Data is stored on CD-ROMs, which the company masters inhouse. For faster retrieval, CHS uses CD-ROM-equipped PCs that hang off the LAN rather than a traditional jukebox setup. With disk space on the LAN costing one-tenth the amount of comparable AS/400 space, CHS saves significantly by storing data on the network.

CHS also achieved indirect savings by switching some processing from the AS/400 to the LAN. The front-end claims processing is done overnight on the idle PCs, freeing up processing capacity on the mainframe and obviating the need for an upgrade of the AS/400. Harley says that saved the company about $330,000.

In three years, the system has recouped its total projected five-year costs of nearly $3 million, according to Harley. More important, he says, I-MAX has paid the company back in productivity gains and increased customer satisfaction. The proof is in the pudding: Featheringill's customer phone calls are down to about one a month, he says, "and most of them are compliments."

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Joe Levy and Lynda Rosenthal

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Conference Overview

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Re-Visioning IT: Achieving an Enterprise Perspective, the tenth program in our CIO Perspectives series, focuses on re-inventing IT and re-adjusting its role in the enterprise. As Megan Santosus, staff writer, notes in the following article, "The position of CIO...today is absolutely precarious." The agenda features distinguished speakers in rare public appearances, outstanding technology product and service providers and senior executives who will address the turmoil within the IT profession.

As keynote speaker Tom Peters states, "Adjust or else. Fifty percent of the Fortune 500 companies of 1980 bit the dust in the subsequent decade. The trick is turning front-line employees into experts and finding other routes to honor expertise without creating cumbersome staff structures that gum up the works. Learning to be more expert than ever in non-bureaucratic ways is a tough puzzle to solve. Yet no task is more important to tomorrow's managers."

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Lynda Rosenthal
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Executive Programs
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HIGH ANXIETY, HIGHER STAKES AND LOFTIER VISIONS

BY MEGAN SANTOSUS

If there's one inescapable fact of life for many companies operating in today's global economy, it's that the stakes of doing business have never been higher. The potential rewards of success seem to be outnumbered only by the risks: Pitfalls capable of inflicting serious damage to even the most well-managed organizations are more numerous and varied than ever before. For organizations hoping to survive, let alone prosper, change — in terms of strategies, markets and top management — has become the order of the day.

Unfortunately for many CIOs, organizational change has come at the expense of their jobs. The position of CIO has always been somewhat insecure, but today it is absolutely precarious. As turnover rates among the top IS ranks continue to rise, one message is coming through loud and clear: CIOs must learn to revision IT in support of changing organizational imperatives or their days are numbered. Al Ries, chairman of consultancy Trout & Ries in Greenwich, Conn., has a succinct assessment of the situation. "The biggest problem faced by the CIOs of today," he says, "is not the vision of IT, but the vision of the enterprise." In Ries' opinion, too many companies are being swept up in the hype over converging technologies such as computing, telecommunications and consumer electronics. It is the job of the CIO to steer CEOs away from focusing on technology fads, and instead concentrate on the rational use of information.

In order to do this, CIOs have to get beyond looking at technology as the centerpiece of their jobs. Revisioning IT can only be successful once CIOs get a firm grounding in the day-to-day operations of the enterprise. Achieving this daunting task will in turn require mastering a wide range of skills and developing broad-based knowledge of every aspect of an organization including research and development, sales and marketing, manufacturing and accounting.

The position of CIO has always been somewhat insecure, but today it is absolutely precarious.

The biggest problem faced by the CIOs of today is not the vision of IT, but the vision of the enterprise."

■ Al Ries

In addition to fostering internal partnerships, many CIOs will find it increasingly necessary to leverage the expertise of external organizations by striking alliances with vendors and suppliers. Some CIOs may even have to contend with forming cooperative relationships with organizations that operate in the same competitive arena. In the course of balancing all these responsibilities, CIOs must pay particular attention to training and developing members of their internal IT staffs.

If all of this seems overwhelming and perhaps somewhat frightening, it's little wonder. The thought of tackling even minor changes can be tumultuous; feeling uneasy at the prospect of making major revisions that can affect every aspect of a career is certainly understandable. On the other hand, management guru Tom Peters believes that it is dangerous not to be perplexed and confused during this period of dramatic transformation. And Professor Robert J. Benson offers a comforting thought to those who may feel as if they are being pushed into uncharted territory. As he sees it, CIOs can best position themselves for success in the future by adopting the can-do attitude of the past.

"Thirty years ago, the vision of IT for the business was to develop solutions linked directly to work," says Benson, who is the associate vice chancellor of computing and communications at Washington University in St. Louis and the conference moderator. "IT people were primarily involved with figuring out how to organize work using automation." For example, IT used to be instrumental in conducting work flow studies and charting. "As people throughout the enterprise have become more IT knowledgeable in general, many of those in IT have adopted a defensive posture."

This attitude, which Benson likens to a siege mentality, has resulted in part because CIOs are cautious and feel threatened. "Risk taking was very much a '60s attitude," he explains. "Today, a lot of IT people have lost faith in their ability to contribute to the enterprise. Because there are no barriers preventing IT knowledge from spreading throughout an enterprise, [CIOs] have to accept the fact that they are out of the business of implementing solutions by themselves."

Instead, CIOs must recast themselves in the roles of facilitators, partners and enablers. "The opportunity for CIOs and the IT department is to strike a relationship with the rest of the enterprise in order to find a common cause and then to apply a systems solution." In many cases, achieving this will require a different way of implementing technology.

Charles H. Mayer, the managing director and CIO at worldwide investment-banking concern CS First Boston in New York, is currently in the midst of a large scale downsizing project that has called for a visionary approach. In an effort to reduce costs, improve departmental management capabilities and increase integration with front-end office functions, the IT group is overseeing a move to client/server computing. The visionary part, according to Mayer, is that First Boston aims to totally eliminate its mainframe.

CIOs can best position themselves for success in the future by adopting the can-do attitude of the past."

■ Bob Benson

"Most people feel that downsizing involves migrating to client/server but still keeping legacy systems on the mainframe," he explains. At First Boston, Mayer and his staff have found that the main reasons often cited for keeping the mainframe up and running are not etched in stone. "The costs of rewriting mainframe applications are not as much as most people think," he states.

A couple of large steps still must be accomplished before the move is complete, and Mayer concedes that the benefits of the project remain to be proven. Yet by looking at the project from an enterprisewide perspective and taking a creative approach to implementing an IT solution, Mayer has exemplified the kind of risk-taking attitude and connection to work that Benson advocates.

As technology continues to change at a rapid pace and infiltrate every level of an organization, CIOs have a unique opportunity to make significant contributions to their enterprises. Revisioning IT however, will require CIOs to expand their horizon of knowledge to new levels.

"The bottom line is leadership," asserts Benson. "The revisioning of IT will center around the themes of connectivity, relationships, integration and partnerships. It's going to take leadership on the part of the CIO to make sure that the implementation of technology succeeds in pushing the enterprise forward."

Extinction Prevention

Tom Peters offers advice on managing constant change

Successfully reinventing the organization in an effort to cope with today's level of constant change is the theme of Tom Peters' latest tome, *Liberation Management: Necessary Disorganization for the Nanosecond Nineties*. After analyzing details gathered from more than 70 case studies, Peters concludes that executives and front-line employees alike who "treat change as an ally rather than an enemy will thrive. Others who don't will be in for a rough ride."

In the brave new world that Peters foresees, middle managers and their staffs will go the way of the dinosaurs. Organizations will replace hierarchical, "pyramid" structures with much smaller entrepreneurial and dynamic groups that in turn can work closely with small groups of targeted customers. For companies and individuals struggling with changing imperatives, Peters offers the imaginative solutions of such organizations as CNN, Union Pacific Railroad, The Body Shop and Titeflex. Some of his main conclusions are listed below.

- Individuals must learn to take the initiative, continue to re-educate themselves in new skills, and expand their number of personal contacts by networking outside their own organizations.

- Companies must be prepared to give all levels of employees the autonomy to take the initiative and make decisions without strict supervision.

- Large organizations must continue to voluntarily "dismember" themselves into small groups.

- Internal staff service units — including training, accounting and information systems — must be tested in the marketplace in order to benchmark both cost-effectiveness and innovation against outside firms.

In the end, survival comes down to market intelligence, or the information gathered about customer wants. "The creators and purveyors of such intangible knowledge," says Peters, "...are the most valuable players in yesterday's and, especially, tomorrow's economy."

CIO Perspectives Series

Re-Visioning IT: Achieving an Enterprise Perspective

MARCH 13-16, 1994
HYATT GRAND CYPRESS
ORLANDO, FLORIDA

AGENDA

SUNDAY, MARCH 13

3–6:00pm
Conference Registration

7–9:00pm
Welcome Reception

MONDAY, MARCH 14

7–8:00am
Breakfast

8–8:05am
Welcome & Opening Remarks

Joseph L. Levy
President & Publisher
CIO Publishing, Inc.

8:05–9:00am
Re-Visioning IT: The Enterprise Perspective

Conference Moderator
Robert J. Benson
Associate Vice Chancellor of Computing & Communications
Professor of Information Management
Washington University
St. Louis, Missouri

At the same time enterprises are being re-invented and re-engineered, IT executives must re-invent their vision for IT. The need for a new vision...not just new technology...calls for a fundamental restatement of IT's very nature from the enterprise and business perspective. IT managers must enable the enterprise to reach its re-invention and reengineering goals. This session, which sets the theme for the conference, will explore what re-visioning IT is all about...not business as usual... rather re-inventing and rethinking how IT is integral to the enterprise.

9–9:45am
Achieving Customer Intimacy

John Biggs
Head
Hyatt Technical Center
Hyatt Hotel Corporation

The customers of today's technology products want to feel that their technology providers are intimately aware of their business needs so that the merging of old and new technologies will keep them competitive in the marketplace. This session will address the issue of customer intimacy; how companies can cooperate to attain it; and how companies will have to rethink the development of increasingly limited IT resources in the future.

9:45–10:15am
Coffee Break

10:15–11:00am
The Emergence of the New IT Professional

Sharon Heldorfer
Vice President
Field Operations
Property & Casualty
Claims Division
The CIGNA Companies

Success in CIGNA's radically reengineered IS environment demands different skill sets and knowledge than those of a decade ago, resulting in the emergence of a new type of information technologist. This session will focus on the forces leading to that change: the skills required to succeed in this new business environment; the change in mind-set needed by IS professionals and system users; and strategies for effective multi-disciplinary business/IS teams.

11am–12:15pm
A Global Visionary Perspective

Panel Discussion
Moderated by
Marcia Blumenthal
Editor-in-Chief
CIO Magazine

Panelists:

Ken Harris
Vice President
Worldwide Information Systems
Kentucky Fried Chicken

Bob L. Martin
President & CEO
Wal-Mart International
A Division of
Wal-Mart Stores Inc.

One of the most important strategic mandates today is competing in a global marketplace. The world is becoming a much smaller community and trading in international markets is a critical success factor for many enterprises. Our panelists will provide insights into how they have expanded the boundaries of their organizations to compete globally. They will explain the role IT plays in creating global market capabilities and the lessons learned from participating in this process. In a panel discussion and question and answer session following the presentation, conference attendees will have an opportunity to engage these executives in a dialogue.

12:15–1:30pm
Luncheon

1:30–6:30pm
Networking & Recreation

Golf Tournament

Tennis Clinic & Round Robin
with Vitas Gerulitas
Hosted by Computer Associates

6:45–7:30pm
Reception

7:30–10:00pm
Dinner, Entertainment & Tournament Awards Ceremony
with Vitas Gerulitas

TUESDAY, MARCH 15

7–8:00am
Breakfast

8–8:45am
The New Frontier

Ralph Szygenda
Vice President & CIO
Bell Atlantic Corporation

Tremendous changes are occurring in the telecommunications industry today. The merging of telephony, cable television, video programming and interactive services is radically changing the role of the telecommunications provider. This merger will offer the consumer a new frontier of services that will change their daily lives; Bell Atlantic has and will continue to change in order to thrive in this new environment. The impact of the new frontier on Bell Atlantic will be corporate wide, demanding a need for change in its processes, infrastructure, organizations and information systems. World class processes and information technology are a must to meet these new business requirements.

8:45–9:30am
A Visionary Perspective on Systems Downsizing

Charles H. Mayer
Managing Director
& CIO
CS First Boston

Although downsizing is a popular buzzword, many organizations have not fully embraced the strategy. CS First Boston, an international investment banking firm, is in the process of downsizing IT operations from a mainframe environment to a distributed computing environment based on open systems. This session will explore the benefits, as well as the personnel, technology and corporate issues that can be obstacles for organizations "diving in" to mainframe downsizing.

9:30–10:15am
Achieving Balance in Your Corporate Portfolio: An Interview with Hal Rosenbluth

Hal Rosenbluth
President & CEO
Rosenbluth International

During his discussion with Bob Benson, Hal Rosenbluth will focus on the benefits of a people-first management style and will demonstrate the Rosenbluth philosophy that a company's people are its greatest assets. He will discuss unusual hiring practices; training programs; associate satisfaction measurement systems; company culture and technology as a tool, from a people-first perspective.

10:15–10:45am
Coffee Break

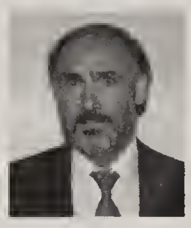
10:45–11:30am
Concurrent Sessions

Operating Networks in the Global Marketplace: Are You Ready?

John Pientka
Vice President
Enterprise Solutions
Syncordia Corporation

New opportunities abound for companies operating in the global marketplace. But how do you make sure your network supports your global strategy? How do you plan for and deploy a global network? Do you have the skills to operate a network of this scale? A variety of solutions is at your disposal, but choices are difficult. This session will provide a useful framework for examining your situation, analyzing your options and making a plan.

Improving Customer Satisfaction through Wireless Technology



Frank Pensiero
Manager
System Development
Pitney Bowes, Inc.
This session courtesy of ARDIS

Pitney Bowes is a pioneer in field service automation. In 1990, the company decided to migrate to wireless technology to improve service reps' productivity and responsiveness and achieved both cost savings and increased customer satisfaction. This session will provide an overview of Pitney Bowes' wireless solution to customer service as well as a discussion on interfacing multiple types of wireless and wireline networks.

Large Scale Client/Server Development Using Information Engineering

Dennis Minium
Director of Technology & Methodology
Information Engineering Facility
Texas Instruments

Client/server computing is more than building pleasing interfaces to remote data. Business process support, application migration, software distribution and technology mobility are but a few of the peripheral issues that must be addressed in order for a client/server environment to yield its promised benefits. This session will examine the benefits and challenges of building a computing environment that can serve the needs of both the individual department and the corporation as a whole.

Videoconferencing for the Global Enterprise

Alan Guibord
Director of MIS
PictureTel Corporation

By allowing teams and individuals worldwide to work spontaneously and interactively without barriers of time and distance, videoconferencing enables companies to leapfrog their competition by delivering products to market faster and providing better customer support. This session will provide real life experiences and insights into how successful CIOs are using videoconferencing in their organizations to improve their competitive positions in the global market.

Client/Server: Adolescence to Adulthood

Mark Leary
Research Director
Telecommunications and Networking
IDC/Technology Investment Strategies

Now that client/server has moved from the backroom to the boardroom, organizations are taking a harder look at not only the reasons and requirements for client/server, but also the results. This session will detail the "lessons learned," drawn from IDC research into early adopter systems; highlight pivotal information technologies, vendors and products; and outline strategies aimed at "maturing" the selection, use and management of client/server systems designed to take your organization into the next century.

Automated Enterprise Management

Jack Reis
President
MAXM Systems Corporation

Automated Enterprise Management (AEM) is emerging as a distinct market segment because effective network, data processing and distributed systems resource management have become the most critically important issues in the information processing industry today. Jack Reis will address the driving forces behind the emergence of AEM; the state of the art in AEM technologies; case studies of early AEM adopters; and the benefits to be derived from effective AEM implementation.

Developing A Plan for Client/Server Architecture

Panel Discussion
Moderated by
Thanos M. Triant
Director
Systems Architecture
Sun Microsystems Computer Corporation

Panelists:

Sheri Anderson
Vice President
Charles Schwab & Company

Jeff Martignon
Chief Client/Server Architect
Kellogg Company

Every large IT department is required to complete an architectural plan for its enterprise. With more firms using IT as a competitive advantage and needing to support a growing infrastructure of heterogeneous platforms and distributed applications, building a plan for client/server architecture becomes more critical to the success of the firm. Sun will host a panel who will address the issues to consider when developing an architectural IT plan.

The Agile Enterprise: The Role of Technology

Mike Galane
Senior Consultant
Hewlett-Packard
Company

In this period of tough economics and survivalist thinking, the role of strategy is changing. The premium is now on moving fast. More than ever the best strategies are irrelevant if they cannot be executed quickly. The successful organization of the future will be the agile organization. By using examples from Hewlett-Packard and client companies, Mike Galane will outline a methodology for combining the power of the new client/server open system technology with empowered work groups to create the agile organization.

The Latest Trends in Open Systems Relational Database Technology

Bob Macdonald
Vice President
Corporate Marketing
Informix Software, Inc.

In 1994, there are a lot of new capabilities coming to relational database technology under open systems. This session will cover the latest trends in RDBMS technology for UNIX and open systems and how your organization can benefit from them. Topics will include parallel processing, mainframe caliber administration, real-time decision support, multimedia data serving, heterogeneous connectivity and data replication.

11:45am–12:30pm

Concurrent Sessions - Repeated

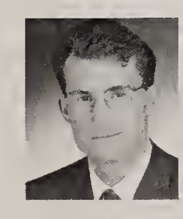
12:30–1:30pm

Luncheon

1:30–2:15pm

Concurrent Sessions

The Role of Middleware in Enterprise Client/Server Computing



Jon Deutsch
Technical Director
Enterprise Data Access
Division
Information Builders,
Inc..

Moving from the mainframe to a distributed computing architecture greatly increases the complexity of information processing. A new class of client/server software, middleware, is a strategic solution for an enterprise to share data among different applications, hardware systems, networks and database, and file structures, in the most cost-effective infrastructure. This session will discuss the criteria for choosing middleware and how to apply it in implementing a client/server solution.

Moving from DOS to Windows in a Corporate Environment: A First Hand View

Panel Discussion
Moderated by
Gordon Rapkin
Vice President, Product
Management & Planning
IMRS

Many companies today recognize that moving from a DOS environment to Windows provides a host of corporate-wide benefits; but moving mission-critical applications is not without its hardships. Anticipating difficulties and learning from other companies' mistakes can make the process much easier. IMRS, a software developer that offers both DOS and Windows financial management applications, will host a panel of key decision makers in a discussion of their experiences.

Re-Inventing the CIO

Phil Andrews
Principal
EDS

Today's enterprises have shifted IT into high gear, looking to IT as a strategic weapon against global competitors and as a potent driver in transforming themselves. A new technology leadership role is emerging. For many, the new number one objective is to use IT strategically for a competitive edge in every aspect of performance. In this session, real-world reengineering examples will be used to illustrate what this means for the CIO, both personally and professionally.

Leveraging IS Through High Growth

H. Scott Barrett
Vice President
Information Services
Blockbuster
Entertainment
This session courtesy of
XcelleNet

Since 1986, Blockbuster has grown from under 100 video stores to 3,407 entertainment stores, with nearly 1,000 of these outside of the US; the company opens a new store every day on average. Blockbuster has also diversified into music retailing, film production, outdoor amphitheaters and family entertainment centers, requiring systems that help these businesses work together to the company's advantage. Blockbuster has been able to sustain and leverage an IS infrastructure that can support a diversified range of entertainment businesses in the face of rapidly changing or embryonic technologies. Hear the key factors that have contributed to Blockbuster's IS success in "the race" to stay ahead, some of the mistakes made along the way, and the future of IS at Blockbuster Entertainment.

The Global Corporate Control Center: What It Is and How It Will Change Your Job

Bob Decker
Vice President
Network Management
Racal-Datacom, Inc.

Traditionally, control technology was purchased by individual departments, with each department having it's own objectives, while technology was perceived as mutually exclusive. The challenge in re-visioning IT's role is to bring together diverse activities to achieve an enterprise perspective that will strengthen and focus corporate goals. This session will explore the issues so you can start charting your re-visioning course of action.

Meeting the Knowledge Challenge – An Enterprise Perspective

Jeri Nechleba
Senior Vice President,
General Manager
Nielsen Software &
Systems

Taking data and information and turning it into knowledge is one of the most critical challenges facing IT today. This challenge is coupled with the difficulty of moving from flexible personal systems to flexible enterprise systems. This session reviews the issues and paths in creating flexible enterprise-wide knowledge systems.

Re-Visioning the Enterprise: Are You Seeing Clearly?

Christopher Disher
Principal
Booz•Allen & Hamilton

David MacBlane
Principal
Booz•Allen & Hamilton

Re-visioning IT must go hand-in-hand with re-visioning the entire organization so that it treats IT as an equal participant in the success of the business. We've witnessed some stunning successes – and some debilitating failures. Share the results of a recent Booz•Allen survey on why re-visioning works better in some organizations than others. Participants will perform a self-diagnostic to find out if their organization is a good candidate for achieving an enterprise perspective or if danger lies ahead.

Rules for Successfully Deploying Client/Server Applications for the Enterprise: Earl's Top Ten

Earl Stahl
Vice President
Desktop Products
Gupta Corporation

Client/server software will play a key role in the ability of IS executives to rapidly improve the responsiveness of their corporate organizations. However, implementing successful client/server applications can be a more formidable task than planning for them. Gupta's vice president of development for desktop products proposes a clear set of rules to follow to ensure that client/server projects are "enterprise savvy," readily accepted by users and meeting the productivity gains expected of them.

The CEO/CIO Disconnect

Alan Paller
Head, Unix Strategies
Computer Associates
International Inc.

The "disconnect" between CEOs and CIOs has been widely experienced but rarely publicly examined. CEOs place partial blame for the lack of dialogue on CIO's use of technically complex languages, their penchant for promising more than they can deliver and on underestimating the challenges of IT implementations. This session is a summary, with video clips and interviews, of a CEO conference on computer technology, where Fortune-1000 CEOs discussed what must be done to facilitate partnering with their CIOs.

2:30–3:15pm
Concurrent Sessions – Repeated

3:15–3:30pm
Coffee Break

3:30–5:30pm
Masters of Tomorrow

Thomas S. Peters
President
Tom Peters Group

Change is today's constant, in any industry you can name. Product life cycles are rapidly shrinking. Jobs are turning into a series of short-term projects. Careers are becoming a portfolio of jobs in pursuit of personal growth, not a lifetime on one payroll. In this presentation, Peters suggests that those who learn to take the initiative, continue to re-educate themselves, work tirelessly on expanding their personal networks, treat change as an ally rather than an enemy...will thrive. Each participant will receive a copy of Tom's latest book, *Liberation Management: Necessary Disorganization for the Nanosecond Nineties.*

5:30–6:30pm
Reception with Tom Peters

WEDNESDAY, MARCH 16

7–8:00am
Breakfast

8–8:45am
Immutable Marketing Laws & the Vision Thing

Al Ries
Chairman
Trout & Ries

Company after company is making the mistake of falling in love with hype and not reality—for instance, the hype of the coming convergence of computing, communications and consumer electronics. But technologies don't converge; they divide. No one is in a better position to deflate the convergence balloon than the CIO. This session argues that the smart, rational use of information is the only way to peer into the future. Each participant will receive a copy of Al's newest book, *The 22 Immutable Laws of Marketing.*

8:45–9:30am
The Administration's Healthcare Reform Policy: IT Implications

Dr. John S. Silva
Program Manager
Advanced Research
Project Agency (ARPA)

National and plan-level health information systems are the lifeblood of healthcare reform and the Administration's "American Health Security Act of 1993." New systems must bring useful information to consumers so they can make treatment choices; to health professionals to make better treatment decisions with their patients; to health plan and alliance managers to meet the goals of reform; and to policy-makers so they can assess and fine tune the health of the overall system. The comprehensive privacy protection and security requirements of the President's proposal, its administration simplification policies, and efforts in the healthcare information infrastructure will be addressed.

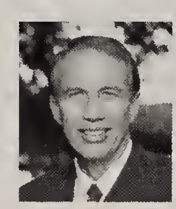
9:30–10:15am
A New Definition of Leadership

John L. Sullivan, Jr.
Vice President &
Managing Director
Korn/Ferry International

As the CIO role has evolved from a narrow, task-oriented function to a more multi-dimensional, policy-setting responsibility, different types of leaders and management styles are required to adapt to the new environment and values.

10:15–10:30am
Coffee Break

10:30am–12:00pm
Mentally Tough: Reaching Peak Performance on Demand



Dr. Jim Loehr
President
MENTALLY TOUGH™
Corporate Training
Program
Loehr Groppel
Saddlebrook Sport
Science Center

Times have never been tougher. If there was ever a time when corporate executives needed to get stronger, more resilient and more productive, it is now. The key is exposure to stress followed by balanced recovery. Work hard and RECOVER EQUALLY HARD is a performance fundamental. Loehr, an expert on sports psychology will talk about tough thinking, tough acting, The Performer Self, empowering emotions, physical and mental toughening, eating strategically and the importance of humor. Loehr's book, *Toughness Training for Life* will be distributed.

12:00–2:15pm
Summary

COMPANION PROGRAM

SCHEDULE

SUNDAY, MARCH 13

7–9:00pm
Networking Reception

MONDAY, MARCH 14

9–10:00am
Companion Breakfast

12:15–1:30pm
Luncheon with Conference Participants

1:30–5:30pm
Sea World Tour
(Optional)

6:45–7:30pm
Reception

7:30pm
Dinner, Entertainment & Tournament Awards Ceremony
with Vitas Gerulitas

TUESDAY, MARCH 15

7–8:00am
Breakfast with Conference Participants

3:30–5:30pm
Masters of Tomorrow
Tom Peters

5:30–6:30pm
Reception with Tom Peters

WEDNESDAY, MARCH 16

7–8:00am
Breakfast with Conference Participants

Enrollment in the companion meal program is necessary to attend meals, receptions and entertainment. Enrollment in this program does not include conference session attendance. An optional tour of Sea World is available for companions.

A companion breakfast is scheduled for Monday morning to give everyone a chance to meet. A CIO companion guide will greet companions, review the planned activities and answer any questions.

Orlando's
HYATT GRAND CYPRESS

Elegance and informality combine to make the 1,500-acre Grand Cypress Resort a spectacular setting for the Hyatt Regency. Centrally located near all of Orlando's attractions, the resort includes Jack Nicklaus-designed golf courses, tournament quality tennis — perfect for the tennis clinic and round robin with Vitas Gerulitis — courtesy of Computer Associates, a health and fitness center, an equestrian center, water sports, superb food and distinctive architecture.

Corporate Hosts

ARDIS

ARDIS is the first and largest nationwide wireless radio data network enabling in-building and on-street data communications between hand-held terminals and host computers. The service enables executives and mobile workers to access their host systems and to communicate instantaneously with their peers from virtually any location. The ARDIS network provides nationwide coverage to more than 10,700 cities and towns in all 50 states, Puerto Rico and the Virgin Islands.

BOOZ·ALLEN & HAMILTON

Booz•Allen & Hamilton is a global management and technology consulting firm dedicated to helping senior executives improve the performance of their organizations. In today's world, there is no such thing as a "business strategy" without technology and operations components. Similarly, IT projects cannot be done in a vacuum—systems must be designed and executed in lock-step with the business vision. Therefore, we balance the concerns of both business and information executives on every assignment, applying the right technologies to further the overall goals of the enterprise.

COMPUTER™ ASSOCIATES
Software superior by design.

Computer Associates International, Inc. is the leading independent software company in the world. CA develops, markets and supports integrated systems management, information and business applications software for a broad range of mainframe, midrange and desktop computers. CA serves the international marketplace through direct operations in 29 countries.

EDS
TAKE ADVANTAGE OF CHANGE™

EDS, Inc. is a leader in applying information technology to the needs of businesses and government worldwide. Dallas-based EDS has spent over 30 years helping customers achieve their business objectives. The company provides the following services: consulting, systems development, systems integration, systems management and process management. With operations in more than 30 countries, EDS has over 70,000 employees. The company posted 1992 revenues of $8.2 billion.

GUPTA

Gupta Corporation, founded in 1984, created the PC client/server systems software market by delivering the first suite of SQL database products and GUI application development tools exclusively for networked PCs. Smooth integration of Gupta applications and databases into the enterprise is provided via a comprehensive array of connectivity products. Gupta has consistently worked to satisfy the critical requirements of corporate data processing with the flexible, responsive technologies associated with PC networks. Gupta's market-leading PC client/server products will propel anticipated 1993 revenues to $57 million.

hp HEWLETT PACKARD

Hewlett-Packard is an international manufacturer of measurement and computation products and systems recognized for excellence in quality and support. HP is the second-largest computer company in the United States with computer revenues in excess of $15.6 billion in its 1993 fiscal year. The company's products and services are used in industry, business, engineering, science, medicine and education in approximately 110 countries. HP has 96,200 employees and had revenue of $20.3 billion in its 1993 fiscal year.

Technology Investment
Strategies Corporation

IDC/Technology Investment Strategies helps corporate executives and managers around the world make their strategic business decisions about information technology. As a subsidiary of International Data Group (IDG), the world's leading provider of information on IT, TIS is well connected to the largest global network of information resources. TIS draws from this vast information network, spanning 49 countries, to provide its clients with a comprehensive set of research and consulting services dealing with the most critical information technology management issues of the day.

IMRS

IMRS develops software for enterprise-level financial management applications in a client/server environment. Founded in 1981, the company's integrated approach to financial management provides access to summarized, enterprise-wide views and underlying supporting detail. IMRS focuses on end user needs while working in partnership with IS professionals to address the diverse transaction processing, accounting, and financial information needs of large corporations. With availability of worldwide support and services, IMRS provides a complete international solution set.

Information
Builders

Information Builders, Inc., has helped MIS organizations develop and maintain mission-critical information systems for nearly 20 years. Today, more than one million people around the world use Information Builders' products, such as FOCUS^{R}, the number one fourth-generation language for application development and decision support. For client/server computing, Information Builders' Enterprise Data Access (EDA) /SQL gives users of SQL-based applications and tools access to relational and legacy data they could never reach before. Backed by expert consulting and comprehensive educational services, Information Builders delivers flexible solutions for all platforms, including Windows and OS/2.

INFORMIX®

Informix Software, Inc. provides the most complete and productive database application technology to build, deploy, run and evolve applications. Informix products include powerful distributed database management systems, robust application development tools, and graphical- and character-based productivity software for delivering information to every significant desktop platform. With corporate headquarters in Menlo Park, California, Informix has European headquarters in London, and Asia/Pacific headquarters in Singapore. Informix Software, Inc. is a leading supplier of information management software providing solutions from the database through the desktop.

MAXM
Systems Corporation

MAXM Systems Corporation is the world's leading supplier of client/server based integration and automation software for Automated Enterprise Management. The company's premiere product, MAXM, permits the integration, automation and management of virtually any wide area network, local area network, distributed processing, voice or data center component and is particularly attractive to the many companies searching for a comprehensive, enterprise-wide management solution. MAXM Systems is dedicated to providing the most efficient and cost-effective Automated Enterprise Management solutions available in the industry.

Nielsen

Nielsen Marketing Research (NMR) is the recognized global leader in marketing and decision support information. NMR provides customers with the highest quality information and decision support services using AI-based software, visual programming environments, EIS and ad hoc analysis and delivery systems. From its world headquarters in Northbrook, Illinois, Nielsen supplies a wide range of services and technologies that help consumer-goods manufacturers and retailers develop insights to make better business decisions.

PictureTel

PictureTel Corporation, the world leader in videoconferencing technology, is "redefining the way the world meets." The company develops, manufactures and markets a full range of visual communications solutions from the desktop to the auditorium, supported by offices in over 100 cities in 50 countries. To provide products and solutions that are in step with the strategic technologies of the '90s, PictureTel is working with the leaders in computing, telecommunications, software and the most respected organizations in a variety of vertical markets.

Racal-Datacom™

Racal-Datacom is an independent provider of data communications products, systems and services designed to meet the business objectives of corporations and government organizations. The company offers solutions for the implementation, integration, management and support of enterprise networks from the desktop through local area and wide area networks. Racal-Datacom offers a broad range of LAN/WAN products, all managed by a single network management system and all supported by a full range of network services.

Sun

Sun Microsystems, founded in 1982, is a Fortune 139 company and a pioneer in the general-purpose workstation market, having launched the now-popular concept of open systems. Sun's networked UNIX products improve workgroup productivity, utilizing the client-server computing model. According to analysts, the company's products command the largest share of one of the computer industry's fastest growing market segments: workstations and servers. Sun is the exclusive computer supplier to the 1994 World Cup.

SYNCORDIA

Syncordia is the world's first company created exclusively to meet the global network outsourcing requirements of the world's largest multinational corporations. Syncordia's outsourcing solutions are designed to help customers improve their global business performance by transferring responsibilities related to the ownership, design and operation of their international enterprise network. Syncordia has a global TDM network that reaches many of the world's largest business centers and a global customer support operation that includes centers in North America, Europe and Asia/Pacific.

TEXAS INSTRUMENTS

Texas Instruments Inc., the I-CASE technology leader, is a high-technology company with sales and manufacturing operations in more than 30 countries. TI develops, manufactures and markets semiconductors, defense electronics systems, software productivity tools, computer systems and peripheral products, custom engineering and manufacturing services, electrical controls, metallurgical materials and consumer electronics products. At Texas Instruments, technology leadership and persistent commitment to quality have been the keys to success.

XCELLENET®

XcelleNet, Inc. develops and markets RemoteWare, a set of software tools used to create messaging-based, automated enterprise workflow systems for organizations with fleets of geographically dispersed users. Centrally managed RemoteWare systems can support thousands of remote or mobile users across "wireless" and "wireline" connections. RemoteWare is ideally suited for business processes dependent on transaction-based information flow.

ENROLLMENT FORM

Perspectives℠

Re-Visioning IT: Achieving an Enterprise Perspective

SUNDAY, MARCH 13–WEDNESDAY, MARCH 16, 1994 • HYATT GRAND CYPRESS • ORLANDO, FLORIDA

NAME

TITLE

COMPANY

ADDRESS MAIL STOP

CITY STATE ZIP CODE

( ) ( )
PHONE FAX

WHAT IS YOUR INDUSTRY?

YOUR NAME AS YOU WANT IT TO APPEAR ON THE BADGE

NAME OF COMPANION (IF ATTENDING)

ADDITIONAL COMPANY ENROLLMENT

The following person from my company also plans to attend:

NAME

TITLE MAIL STOP

( ) ( )
PHONE FAX

ENROLLMENT FEES

Prior to JANUARY 15, 1994

☐ **IS Practitioners/Executives**: If you are a CIO, IS executive or hold another executive position, the fee is **$1,195.**

☐ **Government/Military**: The fee, which includes your hotel for three nights, is **$1,595.** CIO will make your reservations.

On/after JANUARY 16, 1994

☐ **IS Practitioners/Executives**: If you are a CIO, IS executive or hold another executive position, the fee is **$1,295.**

☐ **Government/Military**: The fee, which includes your hotel for three nights, is **$1,695.** CIO will make your reservations.

☐ **Sales/Marketing/Consulting**: If you are in a sales, marketing or consulting position, the enrollment fee is **$5,000.**

Fee includes conference sessions, concurrent sessions, corporate host displays, conference materials and scheduled food and beverage. Transportation and hotel are your responsibility.

OTHER ACTIVITIES

Monday afternoon activities include:

☐ Golf Tournament	$ 156
☐ Tennis Tournament	Complimentary
☐ Sea World Tour (Attendee)	$ 47
☐ Sea World Tour (Companion)	$ 47
☐ Companion Meal Program	$ 199

Companions must be enrolled in the Meal Program to attend any conference-related functions. (Includes all scheduled food and beverage functions. It does not include conference session attendance.)

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The 1993 ESPRIT AWARDS

A VALUABLE ECO-SYSTEM

A geographic information system helps protectors of Florida's natural resources crack down on violators by boosting their own productivity

BY RICHARD PASTORE

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

The teeth of roaring CATs gouge the earth as a tawny Florida panther peers from the shadows of stunted pines. A work crew is digging under cover of twilight, more fearful of being spotted by authorities than by the small, endangered cat.

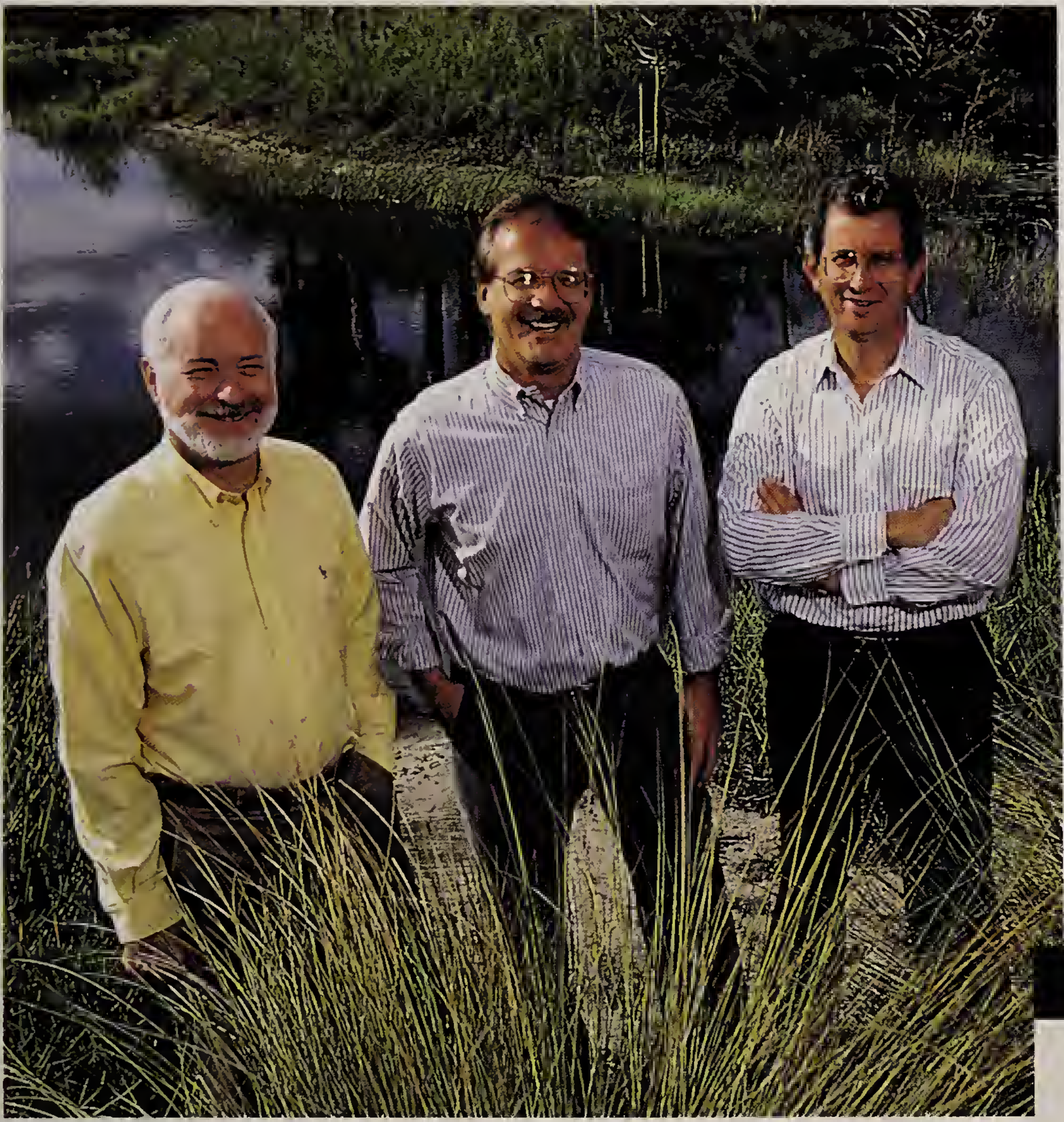
At South Florida Water Management District offices in nearby West Palm Beach, an enforcement agent working late squints into her glowing workstation screen. The geographic information system (GIS) paints a map of the Northeast Everglades sector. Over this, the agent superimposes a grid showing all dig permits issued for the area. Pushing more keys, she adds an image of the latest digitized satellite photo, enhanced to show digging activity. Something doesn't mesh.

Another dusk falls, and the diggers resume their work, their feline observer again crouched amid the trees. Branches suddenly whip wildly, and the panther bolts. A helicopter descends into the clearing—field agents pour out and surround the violators.

Score one for the embattled Florida ecosystem, the GIS and the good guys at South Florida Water Management. The state agency is charged with monitoring and protecting natural resources, meeting water-supply and -quality needs, and preserving fish and wildlife habitats in its nearly 18,000-square-mile territory, which stretches from midpeninsula Kissimmee down to Key West.

Prior to the GIS's introduction in 1991, topographical maps, permit data and field observations were usually gathered and analyzed manually, making analysis and enforcement efforts tedious and inefficient. "We have 38 layers of information in the GIS that can be combined and overlaid in any combination—something nearly impossible to do manually," says Robert T. Brown III, GIS project manager.

Though environmental protection is a big part of the agency's mission, it's hard to measure ROI in terms of political correctness or panther territory saved. But it was easy to justify the $5.6 million up-front GIS



ROBERT T. BROWN, JAMES D. YAGER AND JOHN LYNCH (FROM LEFT) ACKNOWLEDGE INTANGIBLES SUCH AS BETTER DATA QUALITY IN ADDITION TO THE GAINS USED TO CALCULATE ROI.

PHOTO BY RED MORGAN

investment in terms of productivity gains primarily in the analysis process. By the end of the third and final year of its implementation, the system had returned a gross total of $9.4 million in productivity savings, or $3.8 million net. It has boosted professional-staff productivity 450 to 1,000 percent; technician productivity has jumped 300 to 500 percent. One 1992 project alone netted $2.7 million in savings.

The previous technology, a 13-year-old automated mapping system originally intended for computer-aided design, could not access the agency's relational database or combine digital photography with map data, limiting its analytical usefulness. Because the system was not enterprisewide, analysts had to track down data (often redundant and out-of-date) from different agency departments, a logistical quagmire. Operationally, some massive projects weren't even being attempted because they would take too long—perhaps four or five months, sometimes even years, according to Brown. By that time, the originating data would be obsolete.

In 1989 a multidisciplinary agency team began an 18-month investigation into GIS technology. After identifying ARC/INFO from Environmental Systems Research Institute as the preferred system, Andersen Consulting came aboard to help IS justify the investment for the politically appointed governing board. Productivity records that had been kept under the old system helped validate the ROI projections. These historical measurements were pulled out to compare with productivity predictions for the same type of work to be done with the GIS. "We used the time savings and the workers' salaries and overhead to calculate the difference," explains John Lynch, department director of information systems.

All the ROI was to be derived from productivity gains. "Productivity was the only thing we felt we could defend, the only thing we had numbers for," Brown says. "But we did acknowledge the intangibles, and we probably would have focused on them more if we needed them to justify the system."

The business case predicted

TECHNICAL PROFILE

OLD SYSTEM

A 13-year-old automated mapping system from Computervision Corp. of Bedford, Mass., combined with manual data-gathering and -analysis methods; isolated Oracle Corp. relational database running on a Digital Equipment Corp. VAXcluster

NEW SYSTEM

Software: ARC/INFO geographic information system from Environmental Systems Research Institute of Redlands, Calif., with a floating licensing agreement now covering 58 seats

Hardware: The GIS runs on workstations from Sun Microsystems Inc.

Architecture: The GIS workstations are linked to the Oracle database via an optical fiber backbone and twisted-pair wiring under TCP/IP Ethernet

THE BOTTOM LINE

	Three-Year Implementation	Subsequent Years (average)
GROSS RETURN		
Productivity savings	$ 9,441,202	$ 3,850,000
Total three-year ROI	**$ 9,441,202**	**$ 3,850,000**
COST		
Capital costs	$ 1,973,642	$ 0
Development	$ 1,418,913	$ 0
Ongoing operations & maint.	$ 2,213,760	$ 771,429
Total three-year cost	**$ 5,606,315**	**$ 771,429**
Net annual ROI	**$ 3,834,887**	**$ 3,078,571**

Figures are based on a 10-year projection. This system is in its fourth year.

that a new GIS would deliver a 1.55 benefit/cost ratio ($11.3 million savings/$7.3 million costs) over 10 years and return the initial investment in four years. Maintaining the status quo would have yielded a 1.18 ratio ($4.6 million/$3.9 million). Any project with a ratio greater than one was deemed economically justified; the higher the number, the better the return. So the new GIS was the clear winner.

Still, the ROI prediction process was not without frustration. "It was tough trying to anticipate the number of projects the GIS would be used for without being too optimistic," Brown says. "We tried to err on the conservative side in every step."

The conservative approach couldn't have anticipated that productivity gains would actually prove 507 percent greater than expected and deliver payback in just over a year. These unexpected results were due in part to shrinking hardware costs and liberal licensing terms that allowed the agency to install more GIS seats than planned (there are now 58). Capital costs exceeded projections by a small amount.

Interviews with GIS users supplied the metrics to calculate post-implementation ROI. The most difficult aspect was coaxing users to think in terms of hours spent on projects and on each process within a project. Also, "to make sure we were not being led down the garden path [by users], we had the man-hour data reviewed by the department directors, who had to sign off on it," Lynch says.

Though not yet included on the ROI ledgers, unquantifiable benefits have also been accumulating. For example, the speedier, enterprisewide GIS provides analysts with data that's more current and accurate. "We were never able to keep up with [map and data] updates" under the previous system, Lynch says. "They were done on an as-needed basis in hot-spot situations." The agency now sets map-update frequency and data uniformity and accuracy standards that users can depend on.

Better data quality is helping the agency defend itself in disputes and prosecute violators. For example, if a landowner accuses the agency of damaging his property through its regulatory actions, historical GIS data could prove the agency's innocence and protect it from claims that have run as high as $50 million. "Clearly there is a really strong loss-prevention potential with the system," says James D. Yager, the agency's assistant executive director for management services. System data also helps the agency prove violations, as in one recent incident where it contributed to a $600,000 settlement, Yager notes.

The project's ROI success has had happy repercussions for the agency's IS group. By defining and verifying ROI, IS demonstrated "superb business discipline that I think all organizations should attempt," Yager says.

> *"We have 38 layers of information in the GIS that can be combined and overlaid in any combination—something nearly impossible to do manually."*
>
> –ROBERT T. BROWN III

"We proved our credibility by presenting a business case and showing a return that far exceeded our plan," Lynch adds. The project's success has also established it as a model and a standard for future efforts, IT-related and otherwise.

The agency is now building a business case for electronic-publishing technology, with the hope of bringing in a new system that will tie directly into the GIS and handle reporting and technical publication duties. That's not as politically glamorous as helping save the Everglades, but if the ROI is anywhere near that of the GIS, there should be no complaints.

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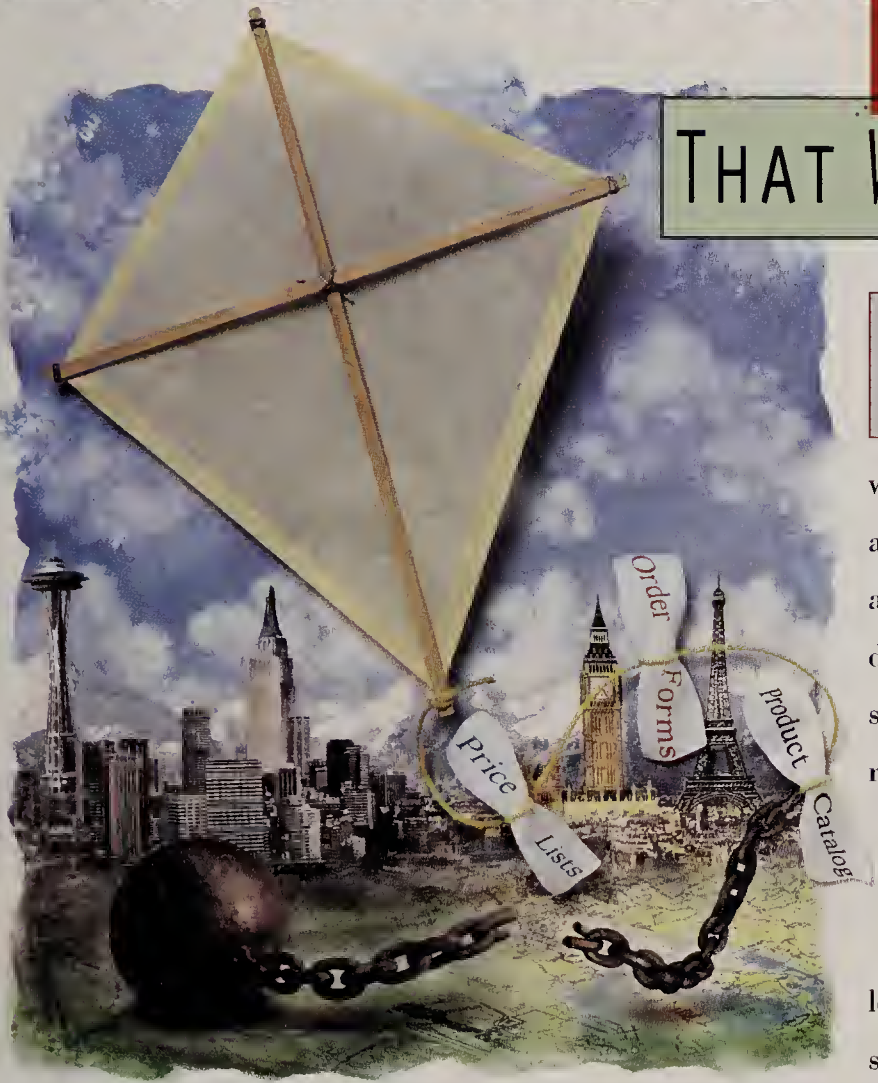

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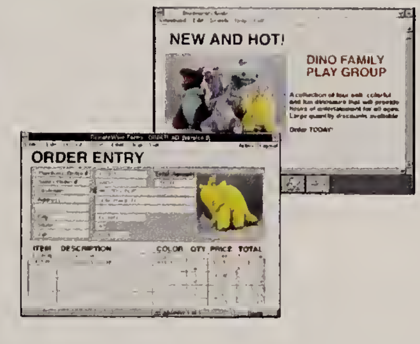

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THE CRITICAL LINK

By practicing what it preaches, one networking vendor achieved stellar growth

BY MEGAN SANTOSUS

SYNOPTICS COMMUNICATIONS INC.

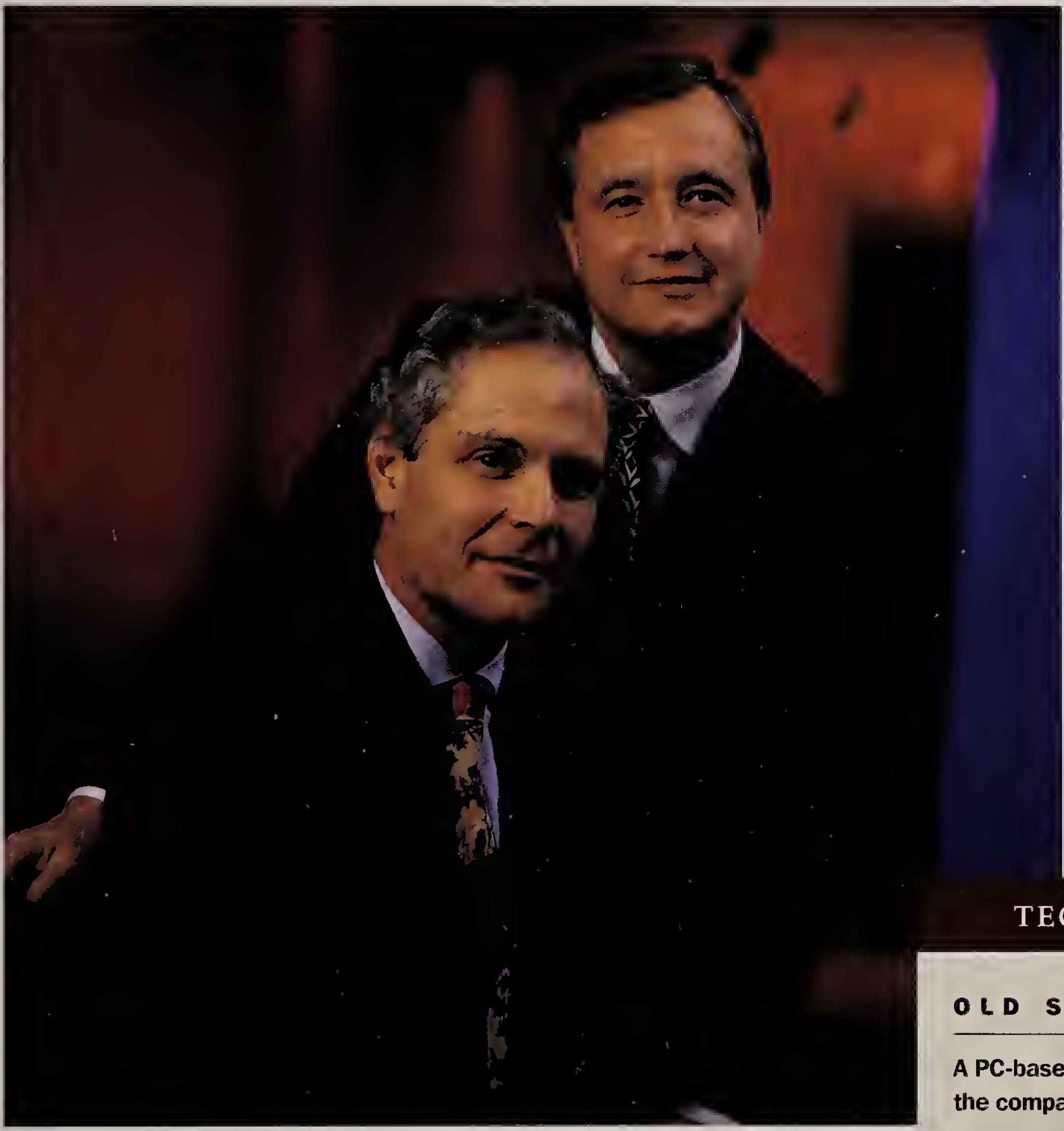
Investing in information technology is something that comes naturally to SynOptics Communications Inc. After all, the Santa Clara, Calif., company manufactures leading-edge networking products and management systems; millions of dollars spent on R&D is one reason it has experienced such phenomenal growth since its founding in 1985.

In fiscal 1992, for example, SynOptics spent $43 million on R&D while revenues topped $388 million—a jump of 57 percent over 1991. And such growth shows no signs of abating: The first nine months of 1993 saw revenues up 100 percent over the same period of the year before.

Yet company officials are quick to point out that rapid growth would not have been possible—or sustainable—without a technology investment of a different kind. In late 1990, the company began to replace a PC-based manufacturing resource planning (MRP-II) system that linked 75 users with an open operating environment it calls the Integrated Information Systems Architecture. The architecture enables manufacturing and business information to be easily captured, shared and presented among 1,500 employees throughout the company. When it was implemented, SynOptics employed 300 people and did $120 million in annual revenues. Today, it employs 1,700 and recently racked up revenues of $183 million in a single quarter.

Executives are convinced there is a direct correlation between the architecture and the company's performance. The architecture supports and promotes SynOptics' culture, which emphasizes speed, flexibility, empowerment and teamwork—and, they contend, is critical to the company's continued growth. "Our financial success is proof that we are getting a very good return on our IT investment," says CIO John Dick. "We developed an entire architecture to add strategic value and support flexibility."

Back in 1990, the company recognized that moving to an open-systems environment and using client/server tools and relational databases could help it compete in a



ACCORDING TO CFO WILLIAM RUEHLE (LEFT) AND CIO JOHN DICK, ORGANIZATIONAL STRUCTURE AND CULTURE DICTATED THE TECHNOLOGY SOLUTION.

dynamic industry. SynOptics wanted to ingrain in its employees corporatewide a sense of empowerment via timely and accurate information. "We wanted to maintain a flat organization, which meant minimizing layers and pushing decisions down as far as possible," says Vice President and CFO William J. Ruehle. "A distributed information system was the only solution that made sense."

The strategic merits of a distributed architecture were recognized by several business-unit executives besides Ruehle. As a result, Dick and the IS department were spared the need to haggle over funds or provide exacting ROI calculations up front. "We knew there would be a lot of benefits that wouldn't show up on a balance sheet," explains Ruehle. "Reducing cycle times, for example, is not something we can quantify, but it certainly creates an opportunity for further growth."

Reducing manufacturing costs—in part by cutting cycle times—was one objective. Others included improving profitability and productivity and providing effective decision support by equipping employees with user-friendly tools to quickly gather information. "We had to become more efficient in general," Dick explains. "Our prices erode by 15 percent every year, so reducing just manufacturing costs couldn't make up for this."

The architecture is built around core business systems from ASK—such as general ledger, accounts payable and manufacturing—that run on a Digital Equipment Corp. VAX/VMS host. An Ingres relational database running on servers from Sun Microsystems Inc. and Apple Computer Inc. provides the integration between core systems and off-the-shelf software such as Microsoft Excel. The database also acts as a gateway to Macintosh desktop machines that give users a common graphical interface. The "fabric" linking everything together consists of wide and local area networks based on SynOptics' LattisNet line of products. Although development began in late 1990, it was not until late 1992 that the architecture began to really pay off, Dick says.

Both Dick and Ruehle downplay the need to come up with hard ROI numbers. "The value of our architecture is realized because it supports our strategic objectives," asserts Ruehle. Nevertheless, Dick has calculated figures for Information at the Desktop, the user front end that is the architecture's largest and most-important part; it includes the core business systems, the decision-support system

TECHNICAL PROFILE

OLD SYSTEM

A PC-based MRP-II system that linked 75 of the company's 300 employees

NEW SYSTEM

Software: **ASK's Manman system; Ingres relational database; a variety of off-the-shelf packages, including Microsoft Excel**

Hardware: **A VAXcluster from Digital Equipment Corp.; file servers from Sun Microsystems Inc. and Apple Computer Inc.; desktop machines from Apple**

Architecture: **Local and wide area networks based on SynOptics' LattisNet products**

PHOTO BY DAVID POWERS

and the integration between the two. A projected five-year investment of $1.9 million beginning in 1992 includes the costs of hardware and software, systems development and implementation, and ongoing systems maintenance, support and operations. Savings of $3.5 million are expected to be achieved through reduced operating expenses due to increased employee productivity and reduced capital investments due to improved price/performance ratios of downsized hardware; in the project's first year, $888,312 were saved. Indirect savings of $156,000 result from eliminating the need to hire two additional employees. In the first year of the project, the net annual ROI was $199,712; the total net ROI expected over the full five years is about $1.8 million, representing a 97 percent rate of return, according to the company. "These numbers are based only on the mechanics of what we're doing, and it's only a fraction of the ROI we've achieved," Dick says.

The benefits Dick and Ruehle consider most significant are not included because both feel there is no reliable way to measure them. "The architecture gives us visibility into our products," explains Dick. "By having information available when and where we need it, our analysts know how our products are doing in various markets." Such capabilities have allowed SynOptics to identify new opportunities as well as leverage existing channels. "This has resulted in a significant contribution to our revenues," says Dick.

> *"The value of our architecture is realized because it supports our strategic objectives."*
>
> –WILLIAM J. RUEHLE

With decision-support systems, managers can also spend less time gathering information and more time analyzing it. "We used to spend two days gathering information and an hour analyzing it," Dick says. "We're now able to reverse that axiom." Because of this, SynOptics' month-end accounting close has been shortened from 10 working days to seven.

In addition, SynOptics has extended its systems environment to its suppliers, reducing manufacturing overhead costs by 30 to 60 percent, depending on product line. Suppliers now have online access to authorized vendor lists, so if a particular chip is unavailable, for example, a supplier can immediately look up a substitute rather than search for a replacement. Parts are also tracked online, reducing safety-stock costs and decreasing inventory cycle time from 21 days to six. Says Ruehle, "One day of inventory is worth $1 million, so cutting out 15 days means we can put a lot of money to other uses."

An accounts-receivable database reduced days sales outstanding (DSO) by two days, making even more funds available. "On average during a recent quarter, we did $2 million in revenues per day," Ruehle explains. "So each day taken out of DSO is worth $2 million."

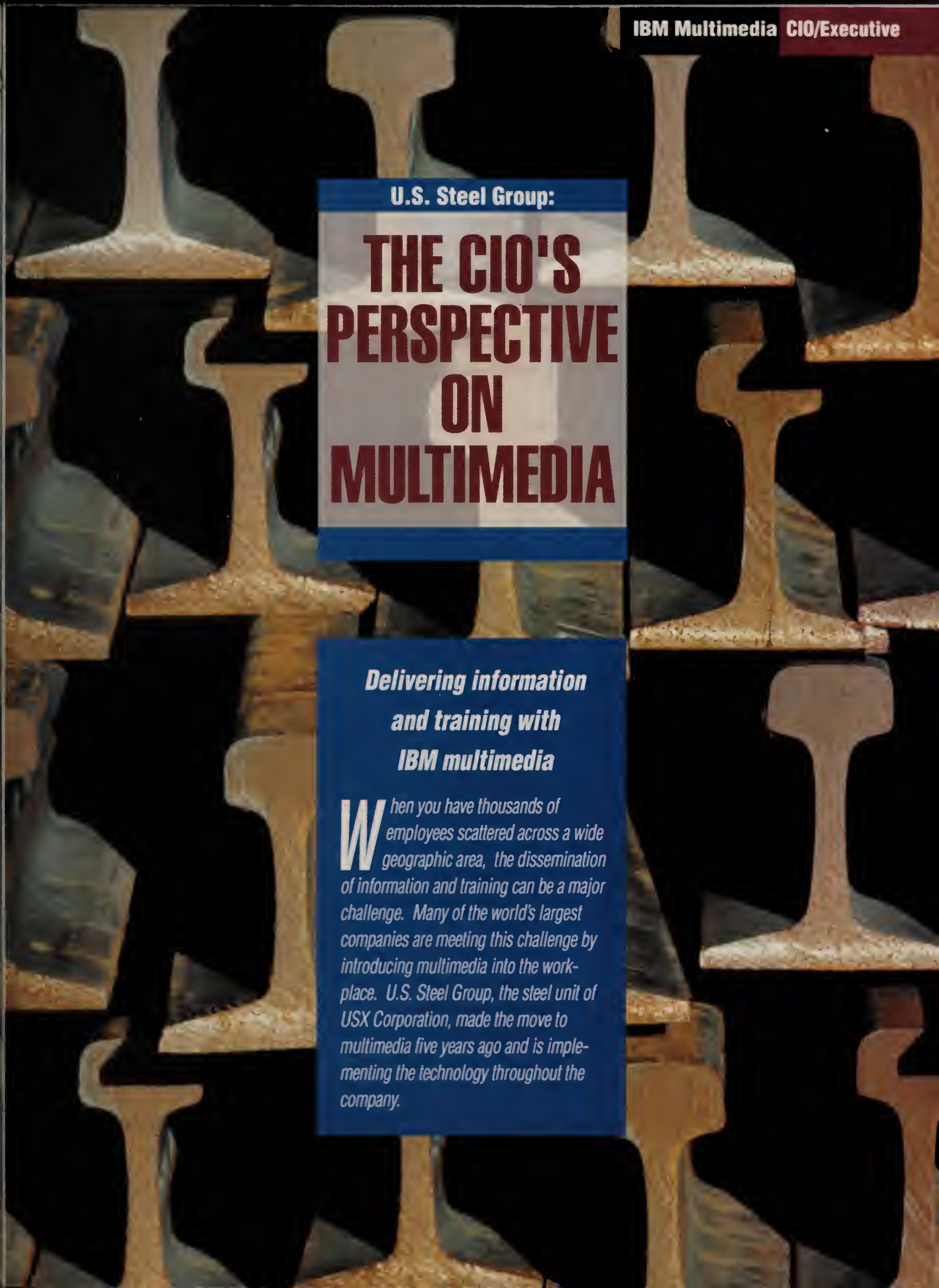
Despite such impressive benefits, Dick emphasizes that the architecture more than pays for itself by supporting SynOptics' overall strategy. "Speed and flexibility are important for us," he says. "Our systems allow us to adapt to changes quickly." With 68 percent of revenues coming from products that did not exist a year ago, SynOptics has certainly made the most of those systems.

"The most-important result," notes Ruehle, "is that we are practicing what we preach by demonstrating how networking can be put to use effectively." While this might sound like a marketing pitch, SynOptics' bottom line speaks for itself.

THE BOTTOM LINE

	First Year	Subsequent Years (average)
GROSS RETURN		
Reduced operating costs	$ 593,400	$ 593,400
Reduced capital invest.	$ 294,912	$ 73,728
Indirect cost avoidance	$ 156,000	$ 0
Total annual ROI	**$ 1,044,312**	**$ 667,128**
COST		
Technology purchases	$ 401,000	$ 0
System develop. & implement.	$ 193,600	$ 0
Ongoing system maint. & support	$ 211,000	$ 236,000
Ongoing system operations	$ 39,000	$ 39,000
Total annual cost	**$ 844,600**	**$ 275,000**
Net annual ROI	**$ 199,712**	**$ 392,128**

Figures are based on a five-year projection. This system is in its second year.



U.S. Steel Group:

THE CIO'S PERSPECTIVE ON MULTIMEDIA

Delivering information and training with IBM multimedia

When you have thousands of employees scattered across a wide geographic area, the dissemination of information and training can be a major challenge. Many of the world's largest companies are meeting this challenge by introducing multimedia into the workplace. U.S. Steel Group, the steel unit of USX Corporation, made the move to multimedia five years ago and is implementing the technology throughout the company.

Talking to the Top

We discussed U.S. Steel Group's multimedia applications with Norb Connors, vice president of information technology for USX Engineers & Consultants, Inc., a subsidiary of USX Corporation that is responsible for selling technology related to steel mill processing worldwide. Mr. Connors was instrumental in bringing multimedia into U.S. Steel Group and remains actively involved in its expansion throughout the organization.

Q How is multimedia being applied at U.S. Steel Group?

A Today, we are using multimedia as both an information vehicle and as a training tool. In the first scenario, we are implementing IBM touch-screen technology to help salaried employees learn about retirement benefits and financial planning and apply what they've learned to their own personal situation through a system called EASY (Employee Access System for You). This highly interactive program is driven by an intuitive multimedia interface and is installed in kiosks at company locations nationwide.

The system works in much the same way as an automated teller machine at a bank. Employees simply walk up to the kiosk and touch the screen, which prompts them to enter their social security number. Then another screen comes up and requests a personal identification number for security purposes. After the system ascertains that the person is authorized access, it retrieves his or her record from the company's IBM ES/9000™ mainframe computer in Pittsburgh, Pennsylvania and downloads it to an IBM PS/2® Model 56 computer in the kiosk. From then on, all calculations are performed on the PS/2, where response time is much more efficient. A graphical interface and audio feed-

Multimedia training is delivered in learning centers at each of U.S. Steel Group's plant locations.

back make navigation easy, and an IBM 8516 Touch Display enables fast interaction. Photographic imagery and animation enhance the experience even more.

Q How was this information delivered in the past and why was an alternative method sought?

A Previously, employees had to call or meet with a personnel representative to receive this information, and a lot of them were uncomfortable about discussing their personal retirement or financial plans with a virtual stranger. The process took up a lot of time for the employees and personnel representatives alike. We felt that multimedia kiosks were the only way to go to educate the employees in a friendly, personalized environment. They can spend as much time on a transaction as they wish, and have as much privacy as they need. The audio can be turned on or off, depending on how the employee wishes to communicate, and the kiosk is designed in such a way that only the user can view the screen.

Q How do the employees feel about the EASY system?

A The EASY system has been a big success. Fully 85 percent of our salaried employees have used the kiosks, and most come back for additional planning. In fact, we are in the process of making the necessary changes to the system so that we may offer this service to hourly employees as well.

(Continued on next page)

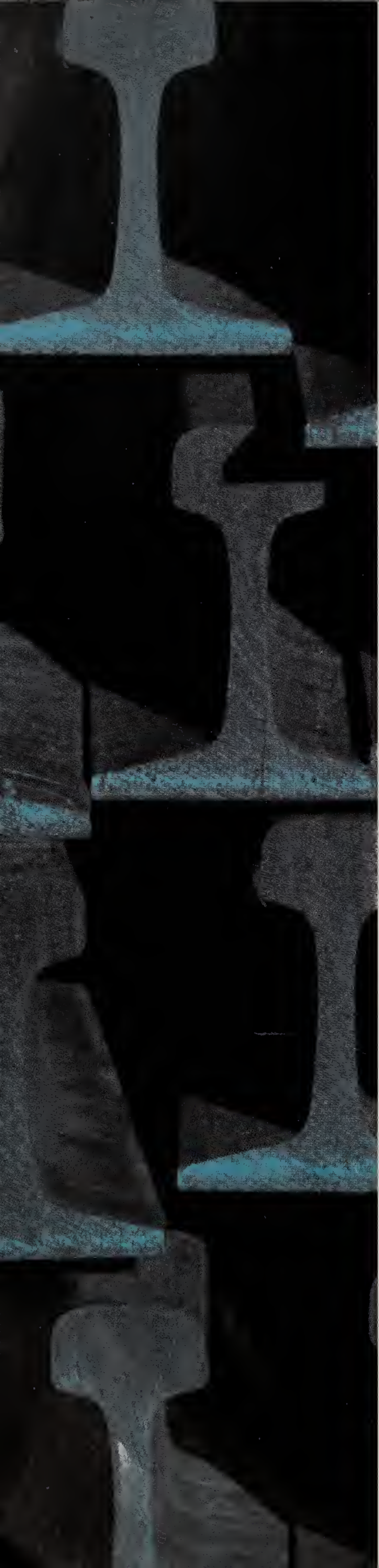
Norb Connors, Vice President, Information Technology, USX Engineers & Consultants, Inc.

Born in Philadelphia, Mr. Connors graduated from Penn State University with a bachelor of science degree in accounting. He joined U.S. Steel in 1960 as an accounting management trainee at the Edgar Thomson-Irvin Works near Pittsburgh.

He was transferred to South (Chicago) Works in 1962, where he held various accounting and systems positions until 1970 when he returned to Pittsburgh to a post in the audit division. In 1973, he moved to Fairless (PA) Works as assistant manager, accounting. He returned to Chicago as manager, accounting at South Works in 1975 and was promoted to director, cost and statistics for USX Corporation's Eastern Steel Division in Pittsburgh in 1978.

In 1979, he was appointed director, commercial and operations analysis in the U.S. Steel Group and was named director, corporate staff in 1980, then group comptroller, diversified business in 1982.

Mr. Connors subsequently served as comptroller for steel & related resources in 1983, and became general manager, information technology for the U.S. Steel Group in 1987. He assumed his present post as vice president, information technology, USX Engineers & Consultants, Inc. in June 1992. Mr. Connors is a member of the National Association of Accountants. ✱



Q How is multimedia being applied in training?

A While we have been making extensive use of IBM multimedia to train employees on skills such as electronic maintenance and instrumentation, we were particularly driven to develop multimedia courseware to replace our existing training on safety and industrial hygiene. The new multimedia course, called HELP (Hazard Elimination and Loss Prevention) is now being rolled out to all of our plants.

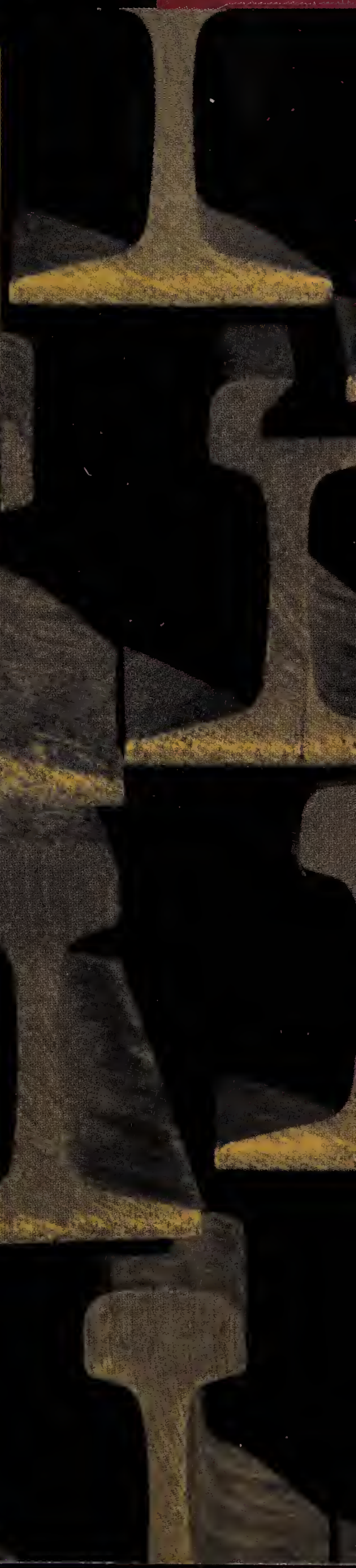
Q How was this training delivered in the past and what were its limitations?

A The safety and industrial hygiene training course was presented in a traditional instructor-led classroom setting. Individuals were taken off of their jobs and sent to a training center for 40 hours of intensive instruction. That's a long course — and the training material was antiquated and boring. As a cost-justification move, we decided to streamline the training and upgrade it to a more current technology. Today, an overview of this 40-hour course takes four to six hours, while a detailed course takes eight to 10 hours — representing at least a 75 percent reduction in time over conventional training.

> *“Today, an overview of this 40-hour course takes four to six hours, while a detailed course takes eight to 10 hours — at least a 75% reduction in time over conventional training.”*
>
> *— Norb Connors, USX Engineers & Consultants, Inc.*

Employees can take courses as many times as they want, and nobody knows but them. There's no need to be computer-literate — the system walks the employees through every step of the process.

Each training station is equipped with an IBM PS/2 Model 80 computer with an IBM 8516 Touch Display, IBM M-Motion Video Adapter and M-Audio playback adapters, plus CD-ROM and Sony laserdisc players.



Q Where and how is multimedia training delivered?

A We have learning centers at each of our plant locations. There are multiple training stations at each learning center, and each training station is equipped with an IBM PS/2 Model 80 computer with an IBM 8516 Touch Display, IBM M-Motion™ Video Adapter and M-Audio playback adapters, plus CD-ROM and Sony laserdisc players. We are also looking into installing these learning stations right at the work location.

Q How have employees reacted to the multimedia training?

A It's a big seller. We have received very favorable comments. Employees can take the courses as many times as they want — nobody knows but them. And they don't have to be computer-literate to take them. All they have to do is sit down at the PS/2 and insert a laserdisc or CD into a player. The system walks them through every step of the way. If they want to stop in the middle of a course module, the system will automatically place a bookmark where they left off. When they log on again, the system brings them right back to that spot. If they want to go back and review what they have already been taught, they can do so. The employees really enjoy the flexibility of the system.

Q What lies ahead for multimedia training at U.S. Steel?

A Ultimately, we intend to reduce the need for training instructors because their knowledge base will already be captured in a multimedia course. We will also continue to expand our multimedia applications. For example, IBM Business Partner, Interactive Media Communications, Inc., has developed a hearing conservation course for us. We are also exploring the possibility of

(Continued on next page)

With multimedia, training is available on demand, 24 hours a day, seven days a week. Multimedia reduces training time while increasing mastery and retention of the subject matter.

delivering remedial academic training — such as math and reading courses — with multimedia.

Q What benefits have multimedia training yielded?

A With multimedia, we can provide training on demand, 24 hours a day, seven days a week. There's never a scheduling problem. We're reducing training time while increasing mastery and retention rates of the subject matter. Employees can review training material whenever they wish at their own facility — there's no need for them to travel, and there's no need to remove them from their jobs for any extended length of time. And we don't need to bring in instructors. This is a very powerful, flexible and cost-effective medium for communicating with large numbers of people on an ongoing basis.

Q How would you advise other information executives who are considering making the move to multimedia?

A We went with multimedia because it allowed us to expand the information that's available to our employees and to provide a better, more cost-effective training environment. It's more than just a dollars-and-cents decision. It's a decision to propagate more effective communications across an enterprise. In the final analysis, well-educated employees are your most valuable corporate asset. ❋

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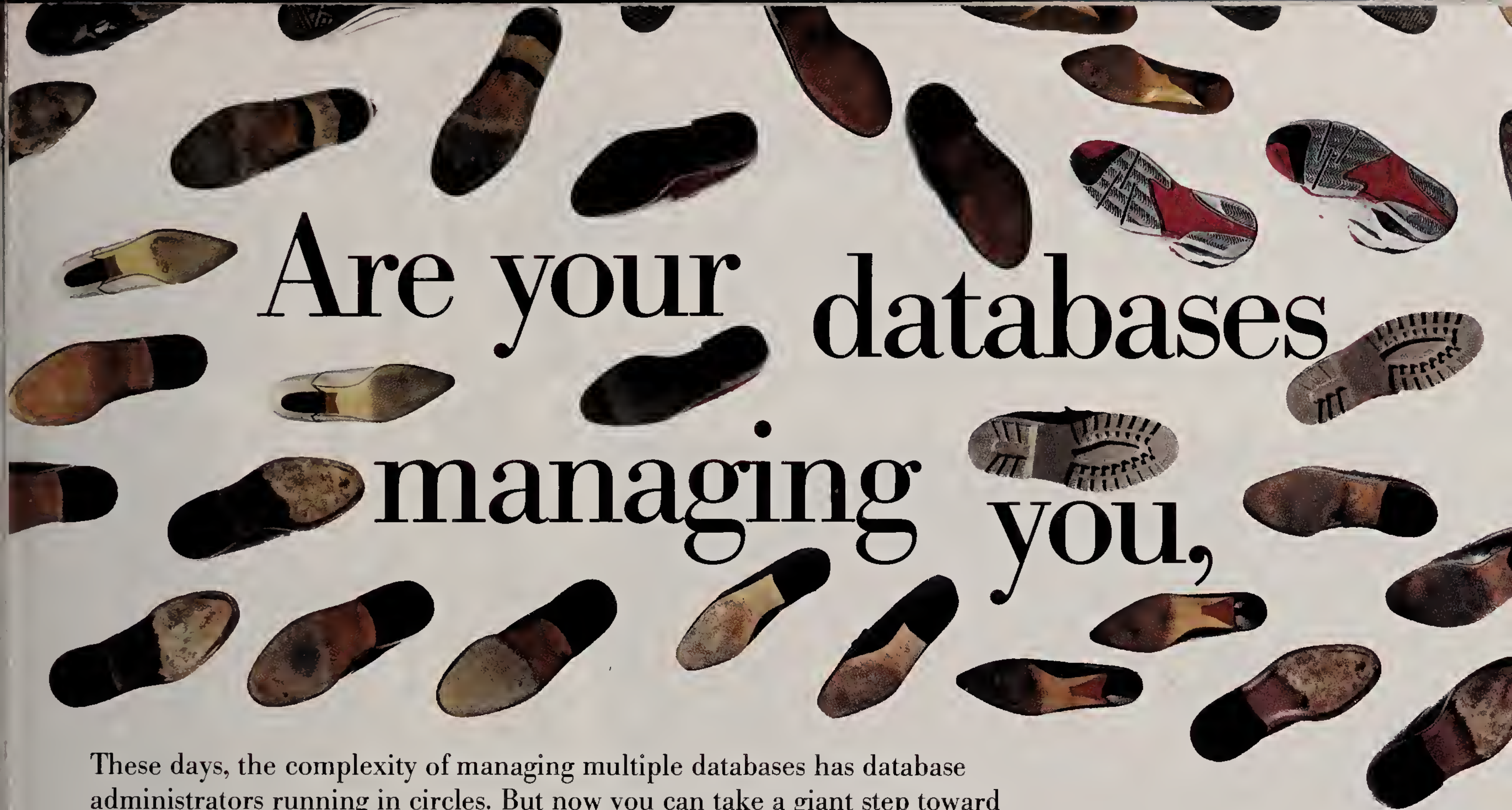

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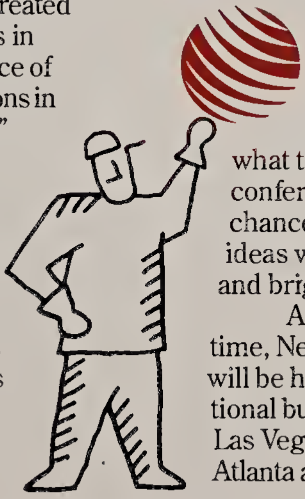

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The 1993
ESPRIT
AWARDS

THE RIGHT TICKET

Offenders still hate the fines, but they now respect the system, thanks to technology that has improved the enforcement of parking laws

BY MEGAN SANTOSUS

CHICAGO BUREAU OF PARKING

Like all cities, Chicago has its share of chronic ills. Yet the Windy City is making progress on at least one major urban problem. Using imaging technology and a geographic information system (GIS), Chicago's Bureau of Parking is alleviating traffic congestion and cracking down on parking scofflaws. The decentralized parking system, implemented in 1990, has more than recouped its initial price tag by improving efficiency, reducing costs and bringing in revenues. Best of all, it has raised customer service to new levels while restoring the credibility of parking laws.

For years, Chicago's parking system was crippled by inefficient procedures, slack enforcement and corruption. In 1987 the Illinois State Legislature passed a statute permitting "administrative adjudication"—municipalities could remove parking violations from criminal courts and establish informal hearings for determining liability. In 1989 the statute was implemented in Chicago, and the bureau was created to develop a new parking system and manage enforcement. By consolidating responsibility within a single agency, officials hoped to make the parking program more accountable and less costly.

With the legislative roadblock removed, the parking system could be redesigned from the ground up. Thousands of handwritten tickets were issued daily, and it often took upward of six months before a ticket was entered into the old batch system, taking the pressure off violators to pay fines. Additional money was lost when traffic officers failed to appear in court for cases being contested, forcing a summary dismissal. On any given day, up to 1,000 people crowded traffic court, hoping ticketing officers would not show up.

Between tickets ignored, successfully contested and dismissed, the annual payment rate was only 10 percent. That translated into $420 million of lost revenue since 1980.

The information systems then in place only contributed to the mess. Official court records were kept by a county office while the city maintained a separate database for billing and enforcement. "It was hard to reconcile the two systems," says Director of

MIKE McGOWAN AND JUDY RICE HELPED BRING ORDER TO A CHAOTIC PARKING-ENFORCEMENT SYSTEM THAT WAS COSTING CHICAGO MILLIONS A YEAR IN LOST REVENUE.

PHOTO BY NEIL MacDONALD

Revenue Judy Rice, who until recently was the parking administrator. Errors were commonplace, and people often continued to receive notices for months after having paid.

All this added up to angry citizens who did not take parking regulations seriously. Illegally parked vehicles clogged downtown streets, creating traffic delays and threatening public safety.

Inge Fryklund, Chicago's first parking administrator (who has since left the bureau), had a vision of how the parking program would function. "She took the idea of administrative adjudication and examined how technology could be applied to manage it," explains Mike McGowan, deputy director of systems and planning. "The goal was to marry the technology with the process and create a more-integrated system." Imaging, handheld ticket writers and handheld radio-communications devices were among the cornerstone technologies that would enable the bureau to reengineer its processes and improve service.

The city opted to outsource because it wanted the benefit of leading-edge technology without investing in equipment that might become obsolete. Ernst & Young prepared a detailed RFP, and by September 1990 a contract was awarded to EDS Federal Corp., of Herndon, Va. EDS provides data processing, database maintenance, ticket keypunching, imaging and training; the bureau controls policy and operational decisions.

Practically every aspect of parking enforcement has been affected. Tickets are encoded with management information that can be easily stored in and retrieved from a centralized database.

TECHNICAL PROFILE

OLD SYSTEM

Manual ticketing processes and two separate database systems that were reconciled on a monthly basis

NEW SYSTEM

Software: Ingres relational database for imaging system; Landtrak geographic information system

Hardware: A 3090 IBM mainframe running the main parking database interfaced with an imaging system running on Sun SPARCservers linked to a network of SPARCstation workstations; handheld automated ticket writers from Radix; portable radio terminals from Husky; NCR cashier workstations with credit-card capabilities; scanners from TDC and Fujitsu; Sony Jukebox for optical disk storage

Architecture: T1 dedicated lines connecting bureau with Auburn Hills, Mich.; radio communications via RAM Mobile Data.

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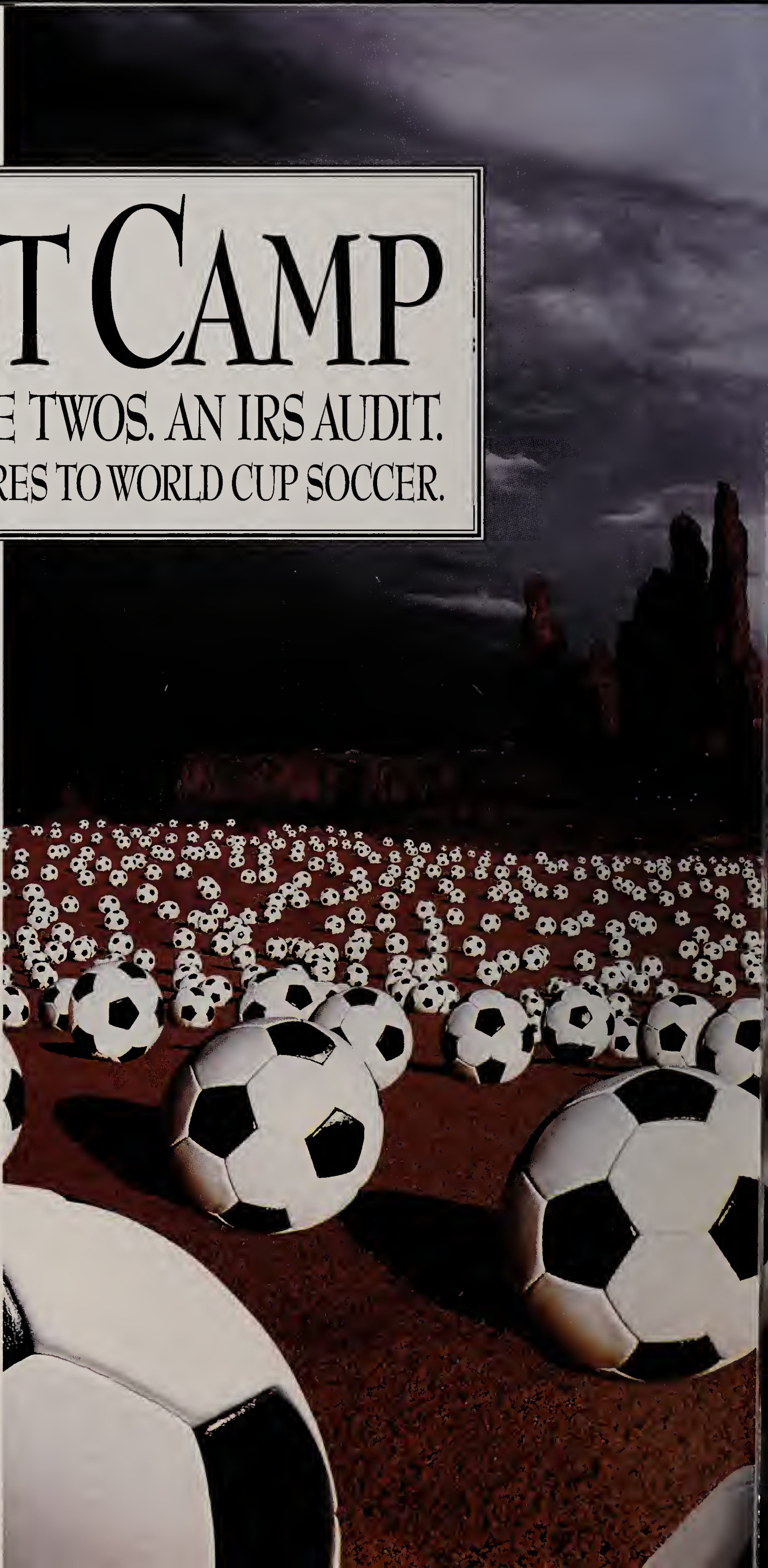

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Handheld terminals are now used to issue approximately 3,000 tickets daily. Data is uploaded overnight into a mainframe database.

The 12,000 tickets that are still handwritten daily are scanned and indexed into a distributed image-processing system within three days of issuance. Boot crews use portable radio technology to track scofflaws via an online database. A computerized inventory of the city's 25,000 parking meters allows service reports to be entered online and automatically prints repair orders. Specific vehicles are located, and traffic patterns are analyzed using a Landtrak GIS tied into the database.

THE BOTTOM LINE

The ROI for Chicago's new parking program is difficult to quantify because the bureau outsources most of its technology operations. The city will pay EDS Federal Corp. $40 million over five years, plus a monthly management fee and payments for collection of backlog tickets and for repeat collection activity on recently issued tickets. EDS assumes all up-front costs of cleaning the database and billing for these tickets, and receives a percentage of payments of problem tickets. In addition, EDS receives a small per-ticket fee for violations loaded onto the database.

The contract was awarded to EDS in September 1990; that year, total ticket revenue, including backlog and other collections, increased to $40.2 million from $34.8 million in 1989. In 1991 the city collected $67.5 million in parking tickets, and in 1992 it collected $75 million. At the time these numbers were reported, the city was budgeted for $85 million for 1993. The city also expects the system to save taxpayers $5 million a year by eliminating duplication of effort, some clerical jobs and court costs, and by freeing up court and police time.

"The imaging technology has made it possible for us to really improve our level of service and be responsive to citizens," says Patricia Bryant, the director of administrative adjudication. The distributed system eliminates the need for centralized paper files. Motorists can contest their tickets by mail or in person at four hearing centers. Both correspondence and tickets are stored on optical disks and can be retrieved in five seconds using Sun Microsystems Inc. SPARCstations. This easy access allows for more-flexible scheduling: Instead of having to make an appointment and wait in court for hours, motorists have a one-week window to contest tickets in person. Hearing officers can work on mail-in contestments when no one is waiting. Approximately 3,000 hearings are now conducted each week; most in-person contestments take only 15 minutes. Ticketing officers rarely appear, and only when subpoenaed by a hearing officer.

The bureau uses ticket-payment rates, meter revenue and traffic flow to calculate ROI, and by all accounts the system has succeeded. A 65 percent payment rate produced revenue of $105 million from inception to January 1993. Meter revenue in 1989 was $6 million; for 1993, the bureau expects to collect $14 million.

There are several reasons for the gains, officials say. The newly efficient system has increased respect for parking laws; while fewer tickets are issued, more fines are paid. In addition, because ticketing officers are no longer required to appear in court, fewer cases are summarily dismissed. And the meter database means hearing officers no longer take claims of broken meters on faith.

A study by the U.S. Department of Transportation indicates a 15 percent increase in traffic speed downtown and a 10 percent decrease in pollution because of improved parking compliance.

The bureau will pay EDS $40 million over five years, in addition to contingency fees for collecting backlog tickets. "Considering we were just about breaking even before," says McGowan, "the taxpayers are certainly getting a bang for their buck."

Officials maintain, however, that the ability to proactively manage parking is the most significant benefit. Previously, congestion in one area might have been addressed by raising meter rates or prohibiting parking, shifting the problems to an adjacent neighborhood. Today the bureau uses ticketing information gleaned from the database and maps generated by the GIS to consider a solution's overall impact on the city.

> *"The goal was to marry the technology with the process and create a more-integrated system."*
>
> –MIKE McGOWAN

The bureau is also more responsive to citizens and businesses. When delivery companies expressed concern about the scarcity of loading zones downtown, the bureau used the GIS to analyze where and when tickets on delivery vehicles were issued. Once the information was displayed visually, planners were able to reallocate loading zones and coordinate delivery times.

Ultimately, officials believe that improved customer service translates into greater compliance because the citizens now view enforcement as fair. "The overall effect of the system," asserts Bryant, "has been to create respect for the law."

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EDS

SUPPORTING A HOUSE OF CARDS

In the volatile and saturated credit-card marketplace, service is the way to keep customers from pulling up stakes. The Universal Card has built its success in part on a customer-service platform that delivers both satisfaction and savings.

BY DEIDRE SULLIVAN

AT&T UNIVERSAL CARD SERVICES CORP.

It's lunchtime circa 1990 at AT&T Universal Card Services Corp. (UCS) in Jacksonville, Fla. A group of programmers has set up a temporary terminal in the cafeteria so that employees can try out Universal Windows (UWIN), the company's new customer-service delivery platform. An associate—AT&T's title for a customer-service representative—finishes her yogurt and wanders over to the workstation, delighted to see that a design she suggested for a new icon in a companywide contest has already been integrated into the system. After lunch, the associate resumes work, eager to come up with other ideas to help make the system even better. The programmers return to their lab to incorporate the day's feedback.

Interaction like this is business as usual at AT&T, a company that has managed to create a work environment where creativity is successfully harnessed to meet strategic objectives. Leslie Palmer, vice president of emerging technologies, describes it as a "continual improvement loop." Out of this loop—and the UWIN platform—have come an assortment of benefits, both in hard dollars and in enhancements to customer-service delivery and employee productivity.

The habit of interaction among employees at all levels is key to understanding how UCS has successfully reengineered its customer-service platform and generated a solid ROI from information technology. "When users are defining requirements, they are limited by what they already know and what they assume is possible," Palmer says. "By putting technology in people's hands and getting continual feedback, we're able to keep improving what we do. Constant improvement equals continual return."

In 1990, when UCS launched the AT&T Universal Card—a credit, calling and ATM card rolled into one—its goal was to differentiate itself in the market by offering superior customer service. In the course of

LESLIE PALMER (LEFT) AND CATHY ORDWAY STRESS THE IMPORTANCE OF DIRECT EMPLOYEE INVOLVEMENT AND CONTINUOUS IMPROVEMENT IN THE DEVELOPMENT PROCESS.

PHOTO BY JUDITH GEFTER

the launch, though, UCS hit a major obstacle: Its existing system couldn't support its primary customer-service objectives.

Prior to the card's introduction, UCS executives estimated that 25,000 people would call their customer-service line each day. Instead, they got 10 times that many calls. Worse, under the old system, associates fielding customer inquiries had to scroll through pages of text, often making customers wait several minutes for answers to simple questions. And because the system was command-driven, associates had to memorize arcane commands and steps.

"Two years ago, if you walked through our operations center, you'd see yellow stickies scribbled with commands posted all over the terminals," Palmer says. But now, after converting to UWIN's GUI-based system, "they've stopped worrying about how to work the technology and can focus on customer needs."

And customers have voted with their feet. In just over three years, the AT&T Universal Card has attracted more than 12 million accounts (in part by wooing customers during the first year with a no-fee-for-life membership); this growth made UCS the second-largest card issuer in the country, after CitiBank. Thank-you notes, calls and letters praising the associates come in at a rate of 2,000 a month. In a September 1993 survey, 97 percent of the customers interviewed said they were "delighted" with the level of service provided by UCS. This is an unusually high level of satisfaction in an industry in which one in every five customers will close an account for service-related reasons, according to Stephen M. Szekely, vice president of credit-card research at Payment Systems Inc., a consulting firm based in Tampa, Fla.

"It's a highly competitive market," says Szekely, "and customers have many choices. Good service fine-tunes a credit-card relationship." (It has also won UCS a coveted Malcolm Baldrige National Quality Award.)

Undergirding the growth of the Universal Card is UWIN, which was rolled out in June 1991. UWIN runs on Sun Microsystems Inc. workstations, accesses information from various AT&T databases and presents the information in a proprietary windowing technology. If a customer calls to report a lost or stolen card, the associate simply clicks the mouse on a "lost or

TECHNICAL PROFILE

OLD SYSTEM

Mainframe-based system with character terminals; slow and cumbersome for customer-service reps to use and inadequate to support the unexpectedly high call volume triggered by UCS's rapid growth

NEW SYSTEM

Software: Universal Windows (UWIN) is an internally developed windowing service-delivery application. GUI-based UWIN can interface easily with the 10 AT&T databases customer-service representatives can access to retrieve customer data

Hardware: More than 2,000 Sun Microsystems workstations and 750 Intel-based PCs distributed across three locations (Jacksonville, Houston and Salt Lake City)

Architecture: Executives at AT&T Universal Card Services claim that the firm is the first credit-card company to use client/server technology for such a large-scale installation

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stolen" icon. UWIN then taps into the appropriate database and the customer's information appears. If the customer has additional questions (such as, "What was my last charge?"), the associate no longer has to page through screens and scribble notes; the system's windowing capability lets different streams of information be accessed simultaneously.

UCS executives report a 19-second savings in the "weighted call value" for each associate. That's customer-service lingo for the total time spent on the telephone with each customer, plus the nontelephone time required to complete the work. As a result of improvements in this area, UWIN will save the company a cool $12 million on customer-service costs alone over a six-year period.

> *"It's a highly competitive market, and customers have many choices. Good service fine-tunes a credit-card relationship."*
>
> –STEPHEN M. SZEKELY

But the numbers don't tell the entire story. "This figure doesn't take into account the fact that while the weighted call value has been reduced significantly, we're also continually expanding our product offerings," says Cathy Ordway, customer-service planning manager. "Basically, the associates are doing more in less time."

None of these changes came as a surprise to UCS associates when the system was introduced. "Associates were formally involved from day one, working with engineers, programmers and people from all levels of the organization," says Palmer. "Development at UCS isn't done in isolation. People actually see, feel and test their input."

THE BOTTOM LINE

	First Year	Subsequent Years (average)
GROSS RETURN		
Reduced operating costs	$ 100,000	$ 2,100,000
Training savings	$ 0	$ 226,000
Hiring savings	$ 0	$ 75,400
Letterhead savings	$ 0	$ 18,315
Signature/sorting savings	$ 20,000	$ 30,862
Systems administration support	$ 0	$ 647,141
Database licensing	$ 0	$ 244,204
Development	$ 0	$ 1,959,760
Total annual ROI	$ 120,000	$ 5,301,682
COST		
Technology purchases	$ 9,000,000	$ 0
Maintenance contracts	$ 0	$ 673,200
Development/implementation	$ 2,500,000	$ 0
Salvage	$ (5,000,000)	$ (0)
Total annual cost	$ 6,500,000	$ 673,200
Net annual ROI	$ (6,380,000)	$ 4,628,482

Figures are based on a 6-year projection. This system is in its third year.

Development like this doesn't come cheap. The new platform cost UCS approximately $6.5 million (after deducting $5 million in "salvage" revenue earned from the sale of the old platform). The cost of maintenance contracts over the system's first six years in business brings the total technology investment to nearly $9.9 million.

By all measures, UWIN has proven to be well worth the up-front investment. For example, the old environment would have required 20 systems administrators to support three sites and 2,000 workstations. With UWIN, only 10 administrators are necessary. In addition, UCS has reduced its database-licensing costs by leveraging UWIN's client/server capabilities. In the old environment, each seat accessing the AT&T mainframe required a separate license. The client/server solution has reduced the number of licenses from 2,000 to four, saving more than $200,000 a year.

These savings, coupled with the customer-service gains and reduced development and technical-staffing expenses, amount to a grand total ROI of more than $16.6 million.

At a time when it's fashionable for IS chiefs to talk about "quality" and "employee empowerment," UCS executives are getting results by involving people directly in the development process. "I knew we were doing something right when I was stopped at a red light and I heard a commotion to my left," says Palmer. "The driver in the car next to me was a UCS associate. I rolled down my window and he shouted out enthusiastically, 'When am I getting my UWIN workstation?' "

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PUTTING THE FINGER ON FRAUD

Los Angeles County needed a foolproof way to staunch costly welfare losses without also creating intrusive red tape that might scare off legitimate clients

BY NANCY HITCHCOCK

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC SOCIAL SERVICES

Mixing wigs, mustaches and other disguises in creative combinations, three men entered a California Registry of Motor Vehicles office and emerged with nine driver's licenses. Able now to assume multiple identities, the men then marched into L.A. County's Department of Public Social Services (DPSS) and proceeded to open nine General Relief (GR) welfare cases. In just more than a year, according to DPSS Director Ed Tanaka, they swindled welfare of $24,000. Another man, arming himself with bona fide birth certificates and Social Security numbers, managed to open 27 cases and walked away with $93,000.

DPSS knew that people were opening multiple-aid cases and cheating the system of millions of dollars, but the agency had no way to detect who was committing the fraud, how great the extent of the problem and, worse, no reliable method to prevent it from occurring.

But times have changed. Today, clerks at the 14 GR district offices fingerprint applicants while they wait to see a caseworker. Each applicant places his or her index finger on a state-of-the-art camera that "freezes" the image on a Hewlett-Packard Co. workstation. Once the image is captured correctly, it is sent via a wide area network to a centrally located confidential Informix database containing all existing welfare recipients' fingerprints. The technology of the matching system allows it to respond quickly to the district offices: Incoming fingerprint images are routed to eight HP 400 parallel-processing workstations, called matching engines, where a section of the entire GR-recipient file resides. Either a "Match" or "No Match"

A FINGERPRINTING SYSTEM PUT INTO PLACE AT L.A. COUNTY'S DEPARTMENT OF PUBLIC SOCIAL SERVICES BY (FROM LEFT) LISA NUNEZ, ED TANAKA AND RAY GARCIA IS SAVING A LOT OF MISSPENT TAX MONEY.

PHOTO BY BRIAN LENG

response is sent back to the remote-site workstations within five minutes. If a match is confirmed, the application is denied.

This automated fingerprinting system (which DPSS claims is the first non-law-enforcement application of its kind in the United States) has in effect netted the county's taxpayers more than $5 million in its first two-and-a-half years of use.

In finding a method to prevent fraud, DPSS sought a solution that would be highly reliable but without the unintended consequence of intimidating legitimate clients. "We're not trying to create a deterrent to keep people off the program; we're trying to deter people from getting on the program more than once," says DPSS Bureau Director Ray Garcia.

The urgency to implement a foolproof system for DPSS's GR program increased sharply in 1984, when the state mandated that counties assist individuals who have no permanent addresses or positive identification. Because the law eliminated these eligibility requirements, the department recognized that it would face a growing problem of fraudulent claims.

The average life span of a GR case is seven months; people find jobs, move out of state or leave the welfare rolls for other reasons. But someone receiving several checks a month has little incentive to get off. "If you're ripping off the system, the likelihood is that you're going to drain it dry," says Garcia. "You'll continue to rip it off until you're caught."

Initially, DPSS had manually fingerprinted and taken Polaroid photographs of roughly 10 percent of its applicants (homeless persons without identification). But it was virtually impossible to manually match more than 60,000 sets of fingerprints stamped in ink on cards. The department employed 10 full-time investigators to enforce this program, but manual fingerprinting ultimately had negligible impact on the problem. Despite its unworkability, however, one positive benefit of the manual system was that it turned up a rough benchmark: Approximately 1 percent of those who had been fingerprinted were found to be fraudulent. One percent may not seem like much, says Garcia, but when it's 1 percent of a $248 million (and growing) annual outlay, that's a lot of misspent tax money.

The department concluded that an automated approach to fingerprinting was the best solution; but no system meeting all of its requirements yet existed. Since DPSS management wanted to create a streamlined rather than cumbersome application process, it mandated a five-minute response time. But the mainframe applications traditionally used in law enforcement required a 24-hour turnaround. DPSS also wanted a high degree of certainty that it was getting valid matches. "We had to

TECHNICAL PROFILE

OLD SYSTEM

A manual method of matching fingerprints

NEW SYSTEM

Software: **Cogent and Printrak fingerprint-matching software; Informix database**

Hardware: **Hewlett-Packard Co. HP 9000 425t workstations at 14 remote sites capture program applicants' fingerprints and send them to a central site, where HP Series 400 parallel-processing workstations match them against prints in a centralized database**

Architecture: **Unix-based client/server platform designed by EDS Federal Corp.**

be sure that when we did confront the client, we were 99.9 percent sure [of the result]," says Lisa Nunez, chief of the computer-services division. But, again, the law-enforcement systems DPSS looked at provided not a single accurate match but a list of possible candidates. Finally, says Nunez, DPSS needed a system that would be easy to use; but police fingerprinting systems were designed for use by well-trained specialists.

In collaboration with Garcia and Tanaka (who spearheaded the development effort), Nunez's IS department created an RFP and sent it to vendors to determine whether a system meeting DPSS's requirements would be cost-effective. (In calculating its projected savings, DPSS relied on the 1 percent of fraud that the manual system had detected.) In 1990, DPSS inked a 5-year contract with EDS Federal Corp. to develop, operate and maintain a system called Automated Fingerprint Image Reporting and Matching (AFIRM).

> *"If you're ripping off the system, the likelihood is that you're going to drain it dry."*
>
> –RAY GARCIA

Since the objective of the new system was not to turn people away, DPSS made a concerted effort to inform the public of its intentions. Through an education and public-relations campaign, DPSS management let its constituents and social-welfare advocacy groups know that the prints would be used only to prevent fraud; they would not be used for positive identification or be shared with law-enforcement agencies.

Three district offices piloted the system in June 1991. All three noted an immediate drop in their caseloads; at the same time, the 11 GR sites that did not yet have AFIRM noticed an unusually heavy influx of new applicants. To remedy the situation, the remaining offices went online in July, one month ahead of schedule.

THE BOTTOM LINE

	First Year	Subsequent Years (average)
GROSS RETURN		
Reduced operating costs	$ 5,400,000	$ 3,675,000
Total annual ROI	**$ 5,400,000**	**$ 3,675,000**
COST		
Technology purchases	$ 1,800,000	$ 0
Ongoing system maint. & enhan.	$ 2,700,000	$ 2,050,000
Total annual cost	**$ 4,500,000**	**$ 2,050,000**
Net annual ROI	**$ 900,000**	**$ 1,625,000**

Figures are based on a five-year projection. This system is in its third year.

Besides getting prints from all new applicants, the department called in the 70,000 clients already receiving aid to have their prints imaged. Of these, more than 3,000 cases were closed immediately because the recipients failed to come in to be fingerprinted. The department then tracked this population for a year and found that all but 906 returned to the program. DPSS concluded that the 906 non-returning clients accounted for its fraud population—1.3 percent of its monthly caseload.

"Most people, like the guys with the wigs and the mustaches, quit the game because they knew it was over," says Tanaka. Now, because of the system, "people just don't try it." These days, of 19,000 new GR applications a month, AFIRM turns away only 30 to 50 people due to matched prints.

In its first two-and-a-half years, AFIRM has reduced operating expenses by $11.3 million, and it is projected to save $20.1 million over the life of the contract. After deducting its $12.7 million investment in the system—including $1.8 million for development of the system—DPSS will have reaped a $7.4 million return by the end of the contract. And because GR has experienced an annual growth rate of as much as 21 percent, the dollar value of fraud deterrence grows too.

Although DPSS calculated its ROI solely on the basis of savings in aid, the system also trims $600,000 a year in labor costs (including the 10 investigators who used to manually match fingerprints); now, lower-paid clerks perform the task more quickly and efficiently with the computer system.

As its benefits expand, interest in the system ripples outward like fingerprint whorls. L.A. County will soon use the system in its Aid to Families with Dependent Children program. AFIRM has generated interest from other counties, states and federal welfare departments. There have even been inquiries from social-service agencies in Great Britain and Australia. CIO

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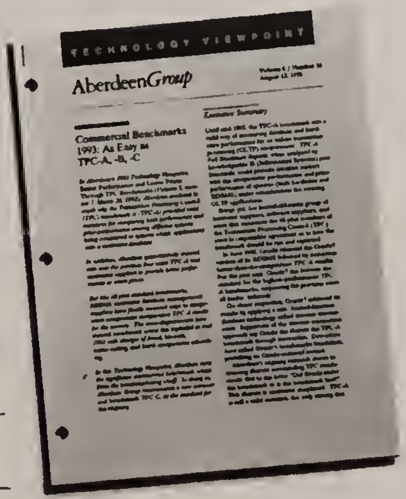

TECHNOLOGY VIEWPOINT

AberdeenGroup

Commercial Benchmarks 1993: As Easy as TPC-A, -B, -C

Executive Summary

CIO 1/15

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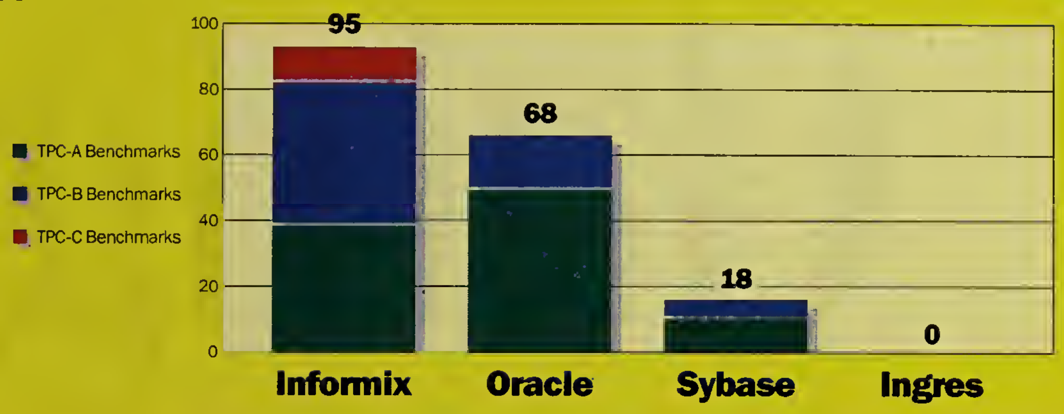

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Going for

The experience of competing in Motorola's interna
two hostile groups into a cohesiv

On a hot, airless evening last July, 15 employees from Motorola Inc.'s Corporate Computer Services organization crowded together in sticky proximity along the bleachers at Chicago's Comiskey Park. When a foul ball sailed into the stands, Chuck Norris was first on his feet, arms outstretched. The ball arced over his head—he felt it graze his fingertips—and plunged into the crowd behind him.

Only two months later, Norris would feel another prize slip through his fingers: a

ADDING SHAUMBURG, ILLINOIS...

PHOTO BY DAVID WAGENAAR

the GOLD

uality contest helped transform what had once been
ffective team BY LEIGH BUCHANAN

...TO SCOTTSDALE, ARIZONA

PHOTO BY DAVID SCHMIDT

chance to lead his team into the finals of Motorola's Total Customer Satisfaction competition, held this month in Chicago. The TCS contest, now in its fourth year, recognizes excellence in using the team process for goal-setting and problem-solving in pursuit of Six Sigma quality. The competition culminates in an Olympics-like ceremony in which finalists from Motorola locations around the world vie for gold and silver status. Successful participation confers considerable cachet within the company.

Norris, a media-storage administrator at Motorola's Schaumburg, Ill., facility, is rueful about his team's defeat in an early qualifying round (last year the team—presenting a simpler version of the same project—made it to the semifinals). But his mood brightens when he considers what the group has accomplished. Team Escapade didn't need a thumbs-up from the TCS judges to recognize its most important achievement. The project brought together two largely hostile groups of employees and, in the crucible of competition, forged a creative, productive, compatible working unit.

If the consolidation had occurred prior to Escapade, chances are that the MACC group's reception would not have been warm. Back then, employees at the two data centers knew little about one another—and didn't much like what they did know.

Motorola Corporate Computer Services is a global organization operating a data center in Schaumburg (known as MACC, for Midwest Area Computer Center) and one in Scottsdale, Ariz. (WACC, for Western Area). Prior to Escapade—an imperfect acronym for "enhance software cycle time and productivity by avoiding duplication of effort"—the staffs at each center functioned independently of each other, following their own agendas and seldom communicating. As a result, there was considerable duplication in areas such as software, hardware and personnel.

The effort to identify and eliminate duplication is important in itself, but Escapade's project became critical last April, when Motorola announced that a long-rumored physical consolidation of the two centers in Scottsdale was finally in the offing. The move is being made to cut costs and further reduce duplication, and it means that sometime in the next two years, some employees from MACC may be asked to relocate to Scottsdale, more than a thousand miles away.

If the consolidation had occurred prior to Escapade, chances are that the MACC group's reception would not have been warm. Back then, employees at the two data centers knew little about one another—and didn't much like what they did know. "It used to be us and them; that was the attitude," explains Lloyd Andersen, manager of online software in Scottsdale. "Whatever we did, they did something different. We were physically miles apart and even further in terms of direction."

Mike Wenc, manager of operations in Schaumburg, says that attitude took its toll on the organization's effectiveness. "It used to be, 'How can I solve this problem just for our group?' instead of, 'How do we solve this problem for Motorola?' "

That the two centers clashed is not surprising: They are as different as winters in Arizona and Illinois. The WACC culture encourages working in teams while MACC employees tend to do things independently. WACC is firmly entrenched in the mainframe world; MACC shows more interest in new technologies and is eagerly pursuing distributed systems. And WACC employees are generally older than their Midwestern counterparts.

Fears about consolidation and job loss hung over the staff as far back as March 1992, when the Escapade project was first announced. "There was lots of nervousness initially," says Matt Murphy, a system-programming specialist in Scottsdale and Norris's co-captain. "[People thought], if you're getting rid of duplication, doesn't that mean you're also getting rid of jobs?"

Escapade was initiated by then-CIO Les Shroyer, who approached MACC and WACC with a mandate to improve financial performance and reduce cycle times. Technicians from both sites determined that software was the place to start and began assembling a team, taking into consideration personalities as well as skills. Like ambassadors from hostile countries, Escapade team members would have to transcend the differences that kept the two groups apart. "The chemistry was obviously very important," Murphy says.

Team Escapade was designed to be a highly democratic organism. Titles have no meaning in this group; a programmer might come up with an idea and her manager take care of the grunt work. "Everyone works together on an equal level; there's no dictating from above," says Skip Griswold, manager of MVS software for the data centers. "And the kind of skill and confidence that generates shows up in crisis situations, which happen all the time when you're working with computers."

> **Although Norris had no experience presiding over meetings, he became co-captain of this year's team after "sort of finding myself at the front of the room one day."**

When Escapade was formed, competing in the TCS tournament was not on its immediate agenda. Nonetheless, participants recognized early on that the project met many of the competition's criteria: It emphasized teamwork, included aggressive, quantifiable goals and was tied to a key Motorola initiative––improving financial performance while maintaining total customer satisfaction.

"Throughout the year, people know that

Its Own Reward

Motorola's TCS program stresses quality, customer satisfaction and working in teams

The Olympics is not just about being the best; it is also about unifying disparate cultures in celebration of the best. That is why Motorola Inc., based in Schaumburg, Ill., chose an Olympic theme for its Total Customer Satisfaction competition.

The TCS competition is a way to bring together all of the company's far-flung business units (107,000 employees operating in more than 20 countries) behind a single ideal of quality and customer service. It is also designed to stimulate team-building, something the company hadn't pursued much prior to the contest's establishment in 1990. This year, 4,000 teams representing some 40,000 employees will compete for 20-odd slots in the finals.

"There's a wealth of things [that happen] when employees use their own initiative to attack problems rather than just doing what managers tell them," says Dave Hickie, retired executive vice president and chief corporate staff officer, and a TCS judge. The competition is meant to enhance communication between workers and managers, who labor together on the same teams, and to give employees the opportunity to apply what they learn in the minimum 40 hours of training Motorola requires annually.

TCS projects are supposed to benefit the company and must be linked to customer needs, include specific goals and deliver expected results. But process matters as much as product: Teams are judged on their ability to apply analytical techniques to problems and on members' abilities to communicate and resolve conflicts.

If a team develops an especially effective methodology, Motorola may send it on an educational mission to other countries. Aside from the possibility of world travel, teams seldom receive tangible rewards for participation. But "when employees who work on the lines in a factory in Malaysia show up in Chicago and make a presentation about how they found a way to save the company $100,000, I think they come away with a tremendous sense of accomplishment and pride," says Hickie. "And I think they come away prepared to do it again for the company."

Competing can elevate the visibility and prestige of internal organizations as well. "Some of the functions that are not in the mainstream of production often feel left out," says Hickie. "[TCS] gives them a chance to say, 'We're a process; we have a product; we have a customer.' And they start to realize that they're not just on the sidelines."

–L. Buchanan

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TCS is coming, and if you're working on a project that's high-visibility and high-prestige, you know it might be good for TCS," says Norris. While the competition can be time-consuming (Escapade members devoted anywhere from 25 to 75 percent of their workdays over the course of several months simply putting together the presentation), participation pays off both for individuals and corporate functions (see related story, Page 71). "There's a buzzword I've heard used around here—your Motorola 'resume,' " explains Norris. "It's what you've done since you've been with the company, and TCS looks very good in terms of that."

Team-building doesn't come cheap. During the course of Escapade, Motorola paid to bring together the whole team—either in Scottsdale or Schaumburg—at least a dozen times.

Preparing a TCS presentation gives workers who have never managed anything the chance to lead a project. Norris is a good example. Although he had no experience presiding over meetings, he became co-captain of this year's team after "sort of finding myself at the front of the room one day." Now, supported by the guidelines Motorola supplies to all TCS contenders ("ask meeting members open-ended questions," "spotlight important contributions by expressing your interest"), he strides confidently around a conference room, soliciting comments from the reticent or briskly ticking off action points while slicing the air, Zorro-like, with his pointer.

Once Team Escapade was assembled, the next step was to bring together its two halves; many members had worked for years at MACC or WACC without ever meeting their counterparts. So Motorola flew the Schaumburg group to Scottsdale for the first of what would be many face-to-face meetings.

"We tried meeting in a phone conversation, but that was very difficult," says Andersen. "E-mail and teleconferencing are great, but for a team project to really work, you have to get the people together in the same room at least part of the time. There's a whole different energy that comes from working together in person."

The first meeting was tense: Both sides carried an attitude of inflexibility into the conference room. But as they began to talk—brainstorming project requirements and forecasting results and time frames—the walls began to crumble. "We walked into that meeting with all that stuff we were locked into, and 20 minutes after talking to these people face to face we just chucked it," says Griswold. "We ironed out a lot of things that had been getting in the way for years. We saw each other as human beings for the first time."

Of course, not everything was automatically sweetness and light. "Throughout the process there were a lot of disagreements because these are people with very strong opinions," says Murphy. "But part of what TCS is about is learning to resolve those disagreements and come to a better resolution as a team than you would working independently."

The two groups set up a series of weekly teleconferences and began E-mailing each other regularly. They tried videoconferencing once, but "you'd hear the person talking and then their lips would move: It was like a bad Japanese movie," says Andersen. Telephone calls between group members, which had been abrupt and unhelpful before they met, became considerably more cordial and productive. And the face-to-face meetings continued, with WACC and MACC alternating visits to each other's home base. (Team-building doesn't come cheap. During the course of Escapade, Motorola paid to bring together the whole team—either in Scottsdale or Schaumburg—at least a dozen times.)

During its initial brainstorming sessions, the team settled on key goals that included improving software quality and customer support, standardizing methodologies and deploying new technologies. Next, Escapade surveyed the software groups at both centers about where they were expending time

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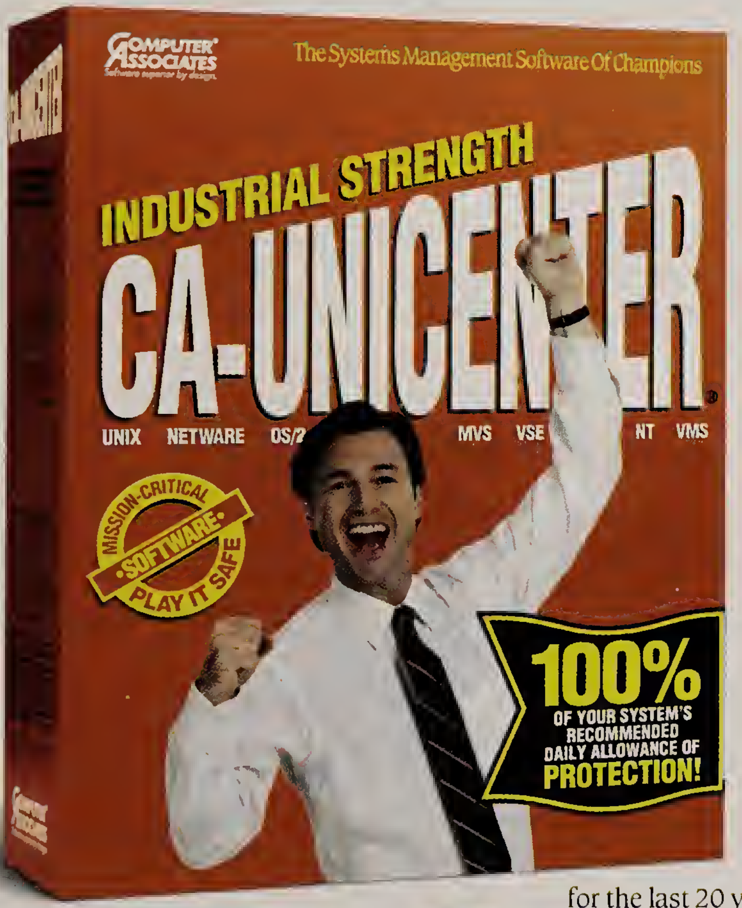
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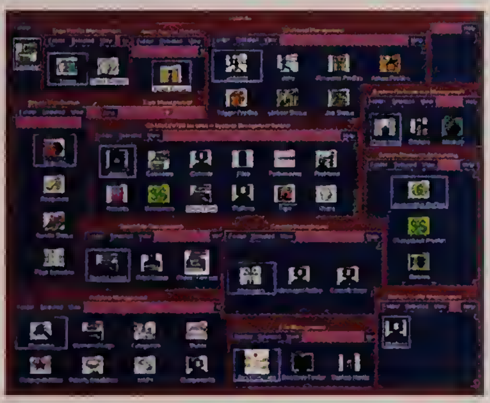

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and effort and began exploring ways to eliminate duplication.

The solutions Escapade arrived at included consolidating two software inventories into one, dividing support evenly between the centers and, in the case of one operating environment, reorganizing staff under a single manager. Enabling one person to perform each step of a software installation or upgrade and then propagating that work across multiple systems further reduced costs and freed up resources.

As TCS contenders, Escapade had more to worry about than simply finding remedies to duplication. Because the competition promotes solving problems through teamwork, the process each group goes through to achieve its results must be documented at least as thoroughly as the results themselves. In addition to showing how outcomes compare to original goals, for example, teams must prove that they adhered to a schedule of meetings and had a methodology for resolving conflict.

While the contest celebrates customer satisfaction and employee empowerment, TCS is also about Motorola's bottom line. In this respect, Escapade was well-armed: The team racked up savings of more than $3 million by negotiating secondary license agreements, redeploying staff into newly created areas (such as EDI and distributed-systems services) and swapping mainframes between the centers.

Finally, all this information must be distilled into a 12-minute script and an array of prescribed charts and graphics. "The charts are probably the most difficult part of the process," says Murphy. "But the judges need them to see that we followed the methodology and so they can have something consistent to judge the projects by." (Motorola executives, customers and suppliers act as judges.)

If Escapade's defeat was not agony, it was certainly a disappointment, especially because the presentation went off without a hitch. Why did the team fail to advance? Dave Hickie, retired executive vice president and chief corporate staff officer, and a judge since the competition's inception, is careful in his response. "It's not that Escapade wasn't good," he says. "But there were some other teams that came on like gangbusters. This year's competition was stiffer than last year's. There were more teams involved, and they had more experience using the problem-solving techniques."

The Escapade team agrees that the field was larger this year, but members argue that none of the other projects matched theirs in magnitude. "Maybe the topic was just too heavy for them; the projects that won were simpler and smaller," says Sharon Vanderbeck, an MVS systems programmer in Scottsdale. And Escapade's scope made it unusually difficult to present in 12 minutes; the group agrees that its original 18-minute script was much stronger. Finally, team members suspect that the project may have suffered because it was Escapade's second attempt, and some judges may have viewed it as a rehash, despite all the new material.

The contest may celebrate customer satisfaction and employee empowerment, but TCS is also about Motorola's bottom line. The Escapade team racked up savings of more than $3 million by negotiating secondary license agreements, redeploying staff into newly created areas and swapping mainframes between the centers.

Escapade plans to continue propagating its methodology throughout Corporate Computer Services, but its competitive days are over. As to whether individual members will return to the TCS fray, everyone agrees that it depends on the project. "The general consensus is that it was an awful lot of work, a lot of time spent," says Vanderbeck. "Whether most of us will do it again, my guess is probably not. But we may get talked into it." CIO

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A Matter of Fax

Recent developments in fax technology have opened up a whole new realm of business possibilities

BY SARAH STAMBLER

Fax is a powerful communications tool that has become an integral part of the way we do business. Most companies use it as a cheaper alternative to Federal Express. But with recent advances in enhanced fax technology—-such as fax-on-demand, fax broadcasting and interactive fax forms—there are even more creative and affordable applications that can streamline operations, cut costs and boost earnings. Several companies in search of a competitive edge have already implemented fax applications to increase sales and customer contact, enhance investor relations, inform the press, improve internal communications and perform data entry.

Fax-on-demand (FOD) provides a simple, instantaneous way to deliver information. With a fax-on-demand system, callers request information from a company by pressing buttons on their touch-tone telephones as directed by a recorded voice. Once callers key in their fax numbers, the system automatically faxes them the information within seconds. Thus the keypad of a touch-tone phone becomes a universal data terminal, and the fax machine becomes a printer.

Setting up an FOD application is a step toward developing "relational marketing," a direct-marketing concept that personalizes marketing communication between sellers and buyers. With an FOD system, a company establishes a dialogue with the caller that can be continued at any time of the day or night, providing customers with easy access that may well prove to be a competitive advantage. And by implementing FOD technology, many companies find they are able to downsize or redeploy their support staffs to other areas. Employees who work in 800- and 900-number call centers are expensive, earning on average between $25,000 and $35,000 annually in a high-tech company; many of them are highly trained and knowledgeable about specific products and services. By shifting the burden of fulfilling countless product-information requests into the workings of an FOD system, workers are freed up to take care of more-complex requests and problems.

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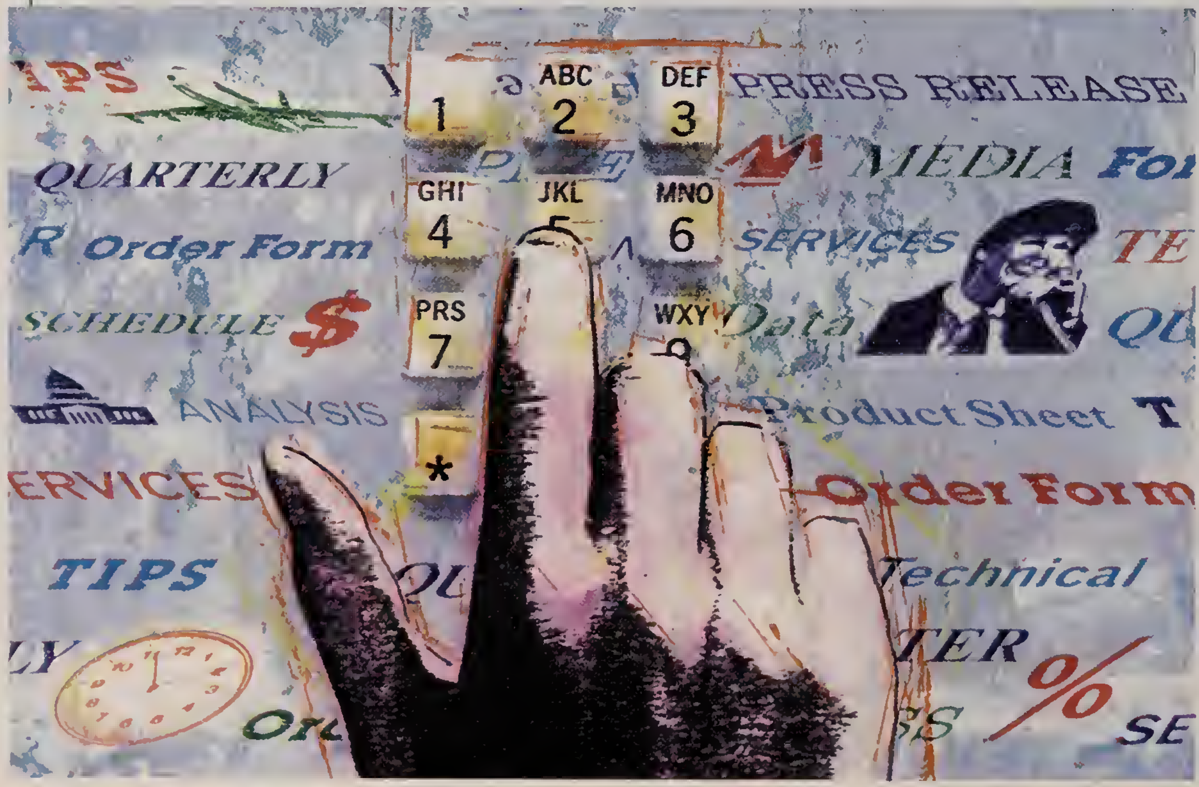

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tomers choose the information they want to receive, the system lets the company gather very specific data for market research.

Gelman has added several other features to this system, including a Personalized Fast-Fax feature, which lets the sales reps and distributors fax information stored on the system with customized cover letters. Salespeople also have round-the-clock access to strategic information that can help them prepare proposals and close more sales.

The Interep Radio Store in New York, a company that sells radio advertising to advertising agencies as well as providing various other marketing services, has increased radio buys by giving its customers market information on major product categories via its ProFAX network.

The fax-on-demand system allows any Interep salesperson to retrieve—within two minutes after calling the network's 800 number—a short report outlining the key characteristics of the typical buyer for a particular product. Each report supplies demographics about the consumer, indicates the product potential in the top 50 markets, suggests effective media mixes to reach the consumer and provides some successful case studies. A customized summary and an analysis of key points are also attached, including charts and graphics. Developed exclusively for Interep by Prosper Business Development Inc. in Columbus, Ohio, ProFAX pulls its data from a variety of sources.

"The ProFAX network system enables the Interep Radio Store sales and marketing force to give media planners at ad agencies an instant education on a product category, which is vital to selling radio," says Marla Pirner, Interep's executive vice president of research. According to Pirner, Interep experienced a $22 million increase in sales in 1993. She attributes this to the company's team of radio-marketing specialists armed with ProFAX and various other new electronic research tools.

Other corporations have set up fax-on-demand systems to handle a variety of information requests not directly related to sales. Sun Microsystems Inc.'s venture into fax-on-demand, for example, began with a need to automate investor-relations communications. According to Sherrie Osborne, an investor-relations specialist, the Mountain View, Calif., company was spending $200,000 annually to mail out quarterly reports to 60,000 shareholders. Sun believed that only 2 percent of the shareholders really wanted the full detail of complete financial reports, which usually arrived four to eight weeks after the earnings announcements were released. A cost analysis showed the investor-relations department that a fax-on-demand system would be cost-effective if up to 15 percent of the shareholders requested the reports, and that there would be real savings if only 2 percent used the system.

Last September, Sun set up a fax-on-demand application on New York-based PR Newswire Association's Pronto on Call system that includes more than financial information. Callers to the 800 number can retrieve documents in four categories: operations-analysis data sheets, earnings press releases, other press releases and product data sheets. Since Sun announced the system in its annual-report mailing, usage reports show that less than 1 percent of the shareholders are retrieving reports by fax.

Apple Computer Inc.'s fax-on-demand system, meanwhile, provides documents from public-relations, investor-relations, media-relations and product-marketing departments: press releases, quarterly financials, product brochures and corporate literature. Because several departments are involved, identification numbers were assigned to each so that they could be billed individually. Any releases the Cupertino, Calif., company sends over PR Newswire are automatically made ready for retrieval from Apple's FOD system, and users in the press can also retrieve an order form for press materials and photographs. Materials are sent out within 24 hours of receipt of the fax order.

The public-relations department at Boeing Commercial Airplane Group and Boeing Corporate needed to automate the day-to-day handling of information requests from the press and from current and potential investors. Last summer it launched the "7fax7" information bank, which includes news releases, order and delivery information, airplane information, company information, corporate quarterly financials and executive biographies. A brochure for the service includes a pop-out card explaining that 7fax7 fulfills callers' routine information needs 24 hours a day, allowing the staff to respond to less-routine questions during regular business hours.

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What can you offer using fax-on-demand? The following seven questions will help you define your FOD application:

1. What do customers, investors or the press call your company for most frequently?

2. What information do you have in your archives that would be valuable to your customers over time?

3. What additional product information do you have that would keep customers, investors or the press fully up-to-date?

4. What short special reports could your staff prepare that you can offer by fax?

5. Has your company received any coverage in newspapers or magazines that you would like to make available to your callers?

6. Is there a library of forms used by customers or employees that are difficult to obtain on a moment's notice but that could be offered via fax?

7. Are there special resource lists you could compile that customers would value?

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* International Data Corporation,
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** "The CW Guide to Servers," Computerworld, March 22, 1993
*** "Clash of the Drive Arrays," PC Week, October 11, 1993
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Try it Yourself

Here's your chance to try fax-on-demand for yourself. Sprint TeleMedia has set up a number to let *CIO* readers access various fax-based resources using an FOD system. By calling 800 873-4451, you will be presented with a menu of four options, which will be faxed to you at your request:

- A Fax Technology User Survey. Callers who participate in this survey, conducted by TechProse Inc., will receive a trial four-month subscription to *Marketing with Technology News*, the company's fax-distributed newsletter. Results of the survey will be published both in that publication and in a future issue of *CIO*.
- An executive summary describing the results of a previous version of this survey.
- A resource directory providing specifics and contact information about the companies and products mentioned here.
- A listing of vendors that offer products designed to help companies develop in-house fax-based applications.

Costco, is enhancing the efficiency of its marketing and sales operations using a combination of fax broadcasting and fax-on-demand. The "Warehouse On Wheels" service provides next-business-day delivery of a variety of products ordered by fax (or phone), including janitorial, office and food-service supplies.

When members dial the automated 800 number, they are prompted to enter their ZIP codes. Using Sprint TeleMedia's Locator feature, the system "looks up" the ZIP code in a database to determine the nearest location to the customer; a recorded voice then gives the caller the location and telephone number. Callers are also prompted to enter their fax numbers if they would like to receive an order form for that location as well as a complete listing of all delivery locations. SprintFAX Document on Demand faxes the requested information within minutes. Callers also have the option of being connected automatically via Voice Referral to the closest location.

Price Costco uses SprintFAX's Broadcast Distribution to alert members via fax to special sales. It can send timely information to thousands of Price Costco members within minutes, highlighting products, seasonal items and other promotional information.

Another powerful feature to emerge in the fax arena is the ability to enter data by fax. Teleform for Windows, from Cardiff Software Inc. in Solana Beach, Calif., is a complete Windows-based software solution that combines form design with handprint, optical-mark and optical-character recognition to enter information from forms into databases, spreadsheets and ASCII files.

Kaiser Permanente's Northern California region Human Resources Services Division, in Oakland, Calif., needed a way to quickly assess and process the hundreds of employment applications it receives each week from numerous hospital and satellite facilities. Setting up the pre-interview-screening test form in Teleform automated and sped up this process.

Many of the facilities do not have PCs or modems, but all have fax machines. The completed test form is faxed to the main office computer and scored automatically. Test results are often faxed back to the outlying office within 30 minutes, but never more than 24 hours later. According to Scott McCoy, manager of information services in the consulting research and development department, managers at sites using the test now feel that 63 percent of their newly hired employees perform at an excellent level, as measured by performance evaluations, compared with 30 percent before the test was implemented.

Southern Pacific Rail Corp. in San Francisco, on the other hand, manages 15,000 miles of track, 19,000 employees and 9,000 vendors in 15 states. The management-services department oversees the computing needs of the entire railroad. In 1992, Southern Pacific initiated PowerFax, a project to replace an outside fax service costing more than $50,000 per month with in-house solutions. The company had been relying on this outside service for much of its communication with vendors, customers and internal employees.

As part of that project, Business Systems Consultant Jon Larson used Teleform to create a form to collect basic information from vendors, including their fax numbers; obtaining this information would let Southern Pacific begin faxing purchase orders to the vendors rather than mailing them. The data-collection form was mailed to all 9,000 vendors, which were asked to fill it out and fax it back to Southern Pacific. The railroad received the information back within a week of receipt by the vendors, often at a rate of 1,000 documents per day. Teleform then processed the information automatically.

Southern Pacific's PowerFax system now runs around the clock daily, and sends and receives more than 60,000 faxes each month. It incorporates fax software from such companies as Alcom Corp., Nuntius Corp., American International Facsimile Products, Centigram Communications Corp. and Caere Corp. in addition to Cardiff.

Sending purchase orders via PowerFax has proven especially valuable. "The $230,000 cost of the entire PowerFax system was recovered in less than four months from recurring savings from elimination of the outside service and from costs of postage and forms in handling," says Larson. "We can save 60 cents per form by faxing rather than printing and mailing; plus we receive immediate delivery rather than waiting three to five days for the mail."

As other businesses learn more about the cost-efficiencies and benefits of fax, many will find that integrating the right mix of fax technology into their corporate profile is a strategic necessity. CIO

Sarah Stambler is president of TechProse Inc., a New York-based electronic-marketing, -research and -publishing firm. She is editor and publisher of the company's Marketing with Technology News, *a monthly newsletter available only by fax.*

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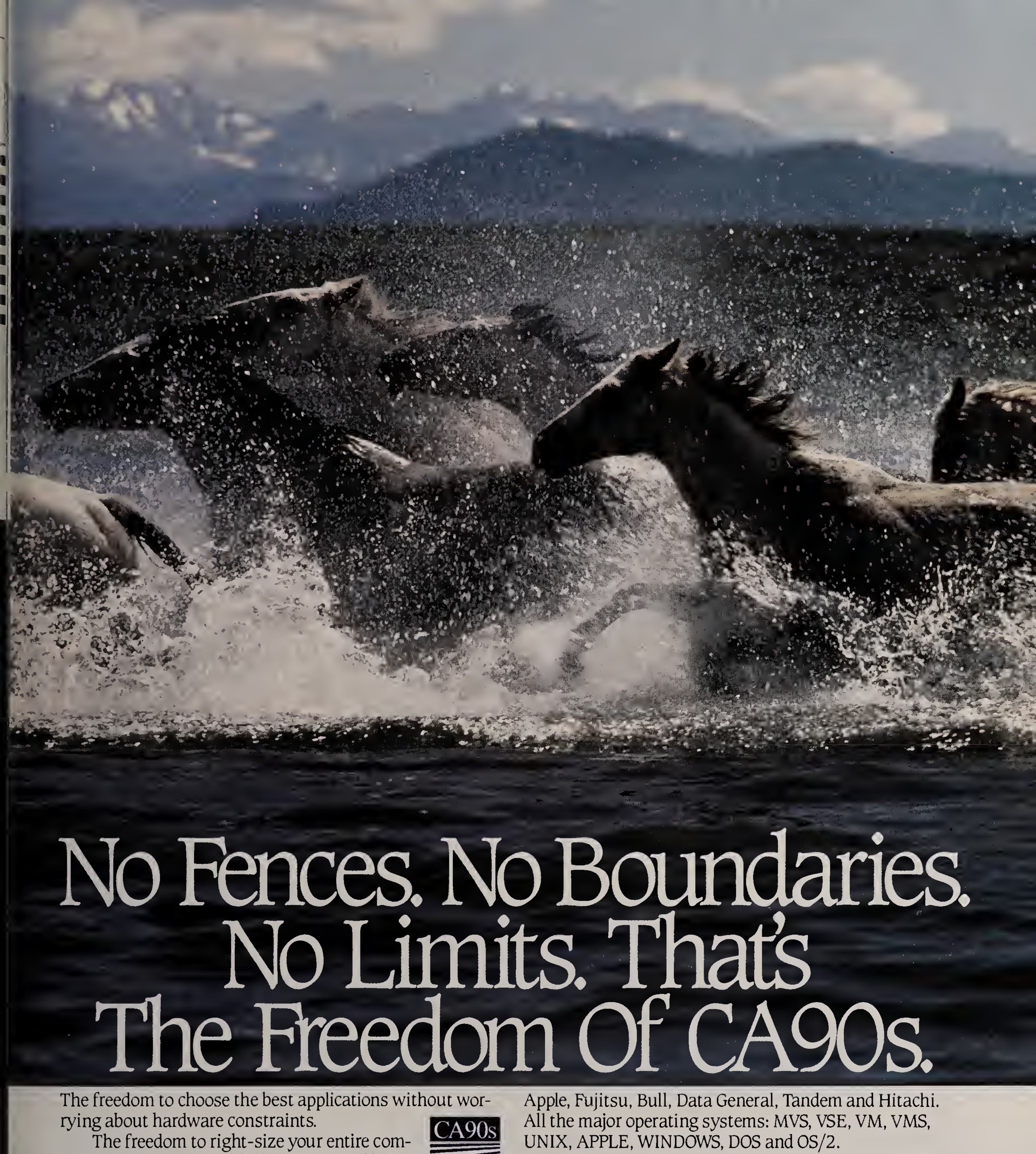

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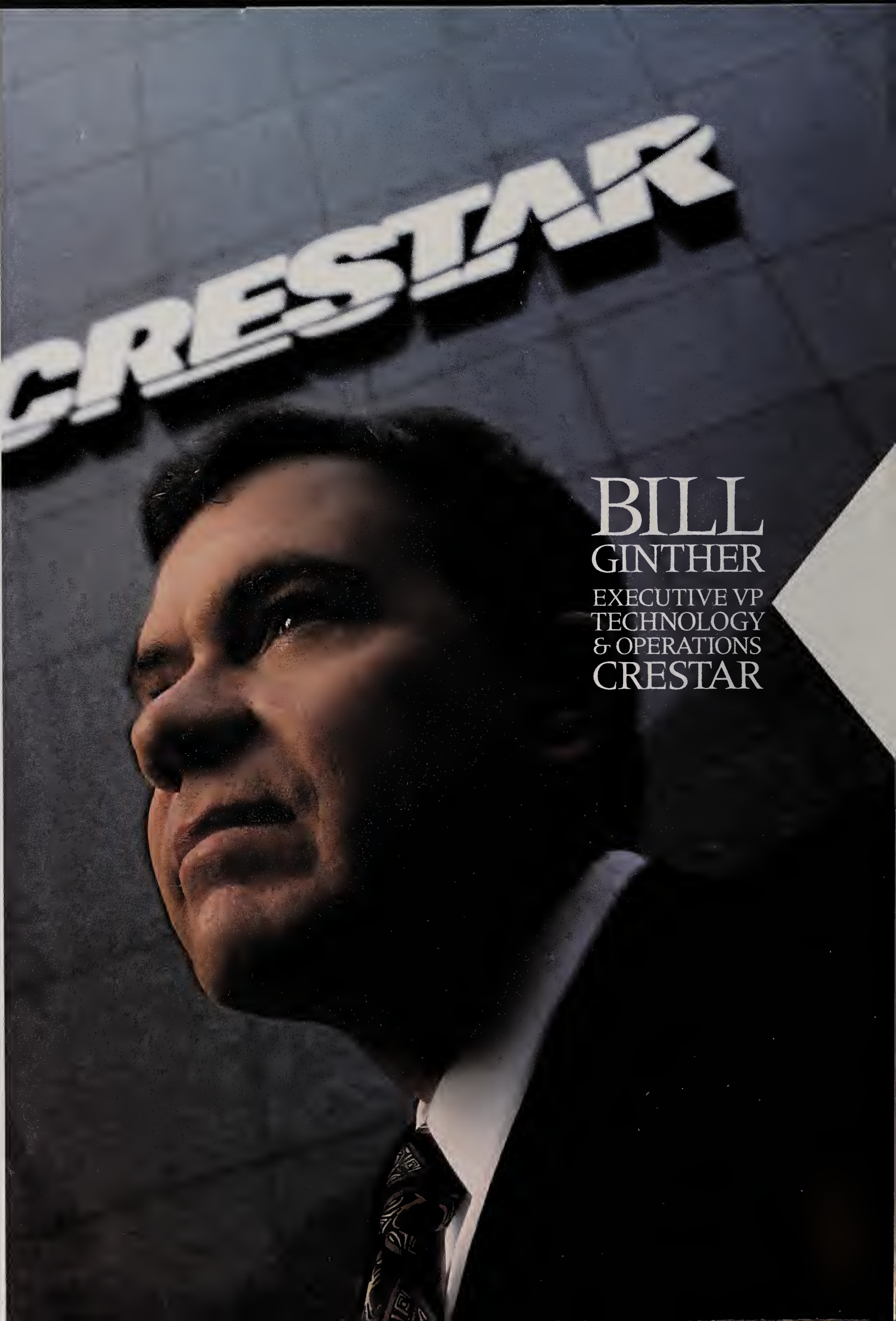

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Pharmaceuticals maker Allergan Inc. takes a focused approach to financial reporting

For a multinational corporation, the ability to collect, analyze and accurately report financial results from operations worldwide is critical. So are timeliness, accessibility and flexibility, since good decision-making demands up-to-the-minute data, when and how you want it. So when Allergan Inc. faced a corporate reorganization, the time seemed right to revamp its unwieldy financial-reporting systems.

Prior to the restructuring, announced in late 1990, the maker of pharmaceuticals and ophthalmic products had two separate financial-reporting systems for its international- and domestic-reporting functions. The process was slow and cumbersome, according to Heidi Udvardy, manager of corporate reporting. Financial data from Allergan's 40 international subsidiaries had to be entered manually from printed reports into two different systems before it could be combined with domestic data to produce the company's overall results.

International data was sent electronically to the international accounting department at Allergan's Irvine, Calif., headquarters. It was then input manually into the company's general-ledger system (BPCS, by System Software Associates, running on an IBM AS/400) for currency translation and consolidation. Meanwhile, results from Allergan's 20 domestic subsidiaries were consolidated separately in the domestic accounting department using Lotus 1-2-3. The international results were printed and input manually into the Lotus system for combination with domestic results.

In addition to being time-consuming and labor-intensive, the setup was inflexible and did not let the company create different views of its data. "We had to go through IS to get reports," Udvardy says. "And the general ledger really wasn't conducive to reporting."

In March 1991, a project steering committee joined forces with consultancy Positive Support Review Inc., of Santa Monica, Calif., to identify requirements and select a new system. In early 1992, they installed Micro Control, a LAN-based financial-consolidation and -reporting package from IMRS Inc., of Stamford, Conn.

Now data sent electronically from the international subsidiaries and that in the domestic general-ledger system is uploaded directly to a central database. From there, the reporting staff consolidates the data to produce standard management, entity and product-line reports. Users can also use Lotus, Excel or any of Micro Control's 200 report formats to produce their own reports, Udvardy says. Users are now much less dependent on IS, she adds, and can produce reports faster and with fewer inconsistencies.

Regional offices can upload the data to produce reports locally, too. Says Udvardy, "Information is now transmitted with the speed of a phone call; everyone can pull up the system and see the same set of numbers with just a few keystrokes."

The corporate-reporting department's independence from IS has been increased further because it maintains the system itself. This enables it to add new accounts, for example, without IS involvement.

Finally, the system provides great flexibility, Udvardy says, including 15 possible "rollups," or ways of organizing data; a management rollup, for example, presents financial data broken down by areas of management responsibility.

The result has been significant savings in time and effort. "In our group alone, we've gotten rid of two temporaries, a director and a senior accountant," Udvardy says. In addition, the domestic close has been shortened by one-fourth and the international close by two-thirds.

The project was so successful that the corporate-reporting department was asked to present it to six major corporations as part of a "Best Practices" program in finance benchmarking.

–Katherine Auer

VITAL STATISTICS

Organization: *Allergan Inc., Irvine, Calif.*

Application: *Financial-reporting system*

Sponsors: *Dwight Yoder, vice president and controller, and Art Taylor, then-vice president of financial planning and analysis (Taylor is now vice president and controller of the Europe region)*

Technologies: *486 PC running Micro Control by IMRS Inc.; Novell NetWare*

Scope: *Corporate-reporting staff, regional finance departments*

Objective: *To combine international and domestic reporting into one system, and to improve the financial-reporting process*

Payoff: *Reduced corporate-reporting head count; shortened domestic close by one-fourth, international close by two-thirds*

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